USS WHIDBEY ISLAND (LSD 41)

PIPING ULTRASONIC TESTING DATA RECORD

SNAPSHOT INSPECTION COMPLETED BY
SUPSHIP C&R USN
PORTSMOUTH, VIRGINIA

NAB LITTLE CREEK VA 17 – 20 JUNE 1999

TEAM LEADER Wayne Redmon

ULTRASONIC TESTING DATA BOOK CONTENTS

1. Pipe Clock Position Diagram.
2. Piping System Ultrasonic Testing Recommendation/ Lessons Learned Suggestion.
3. SUPSHIP Ports Snapshot Inspection Piping Ultrasonic Testing Procedures.
4. Assessment Sheet if required for Piping Systems to be tested.
5. Ultrasonic Test Plan, Piping Measurement point Diagrams/Drawings and Data Sheets for the followings systems:

Firemain Piping Mchnry Spaces

Aux Seawater Cooling Mchnry spaces

Main Engine Fuel Oil Service Piping

Lube Oil Piping System

NOTE: Some measurements points on the Diagrams/Drawings may be inaccessible for taking measurement readings. For additional information see U/T Testing Recommendation paragraph 9 and 10.

TOP VIEW, LOOKING DOWN

FWD/AFT

9

A ***12*** ***F***

3

VIEW "A"

PORT/STBD

P

9 ***12*** ***3***

S

VIEW "B"

UP/DN

9

6 ***12***

3

VIEW "C"

FORWARD---------->

PIPING SYSTEM ULTRASONIC TESTING RECOMMENDATIONS/SUGGESTIONS FROM PAST EXPERIENCE/LESSONS LEARNED:

The following information is provided as supplemental information from lessons learned to the attached UT instructions and not intended to supersede or replace it.

1. Two identical books with drawings and data sheets have been provide: a working copy for use during actual measurements, which tend to get somewhat dirty or ruffled during the process and one for "clean" turn-in.
2. It was easier during the actual measuring process (for all but the CHT piping system) to record the readings directly on the drawing by each measurement point, including the clock position at which the measurement was taken, in pencil, and then later transcribing the measurement points in pencil to the working copy data sheets. When each piping system is completed, it is recommended that the data should then be transcribed in ink to the clean turn-in copies of the data sheets and then turned in along with the corresponding drawings.
3. For the CHT piping system it was easier to record the measurements directly in pencil on the working copy data sheets since four measurements should be taken at each measurement point whenever possible except for lagged piping and then later transcribed in ink to the "clean" turn-in data sheets for turn-in with the associated drawings.
4. Prior to taking measurements in a given space for a piping system it is helpful to physically locate and number the measurement points with a grease pencil or china marker. This makes the actual measurement process faster and easier.
5. Some UT meters require calibration using calibration blocks of material of a known thickness that is of the same material to be measured. (e.g., Corrosion Resistant Steel (CRES) for the Fuel Oil Transfer and CHT Designated measurement points, 90/10 Copper/Nickel (CU/NI) for the other piping systems).
6. For the CHT piping system, due to the past history of problems and the nature of the system, four measurements at clock positions 3, 6, 9, and 12 at each point for bare pipe (not lagged) when possible, and one measurement for lagged piping, preferably at 6 o'clock, when possible. In instances where all four readings are not possible for a given measurement point for bare pipe, then the appropriate "note 1", "note 2", or "note 3" as described in paragraph (9) below should be entered in the appropriate space for that measurement point.
7. For the remaining piping systems, whether lagged or not, one measurement, preferably at 6 o'clock, when possible, should be taken unless readings are suspect in which case additional readings should be taken.
8. Measurements involving lagged piping require a "V" shaped cut to create a flap to gain access to the pipe surface with the probe. After the measurement is taken, the flap should be tucked back into place and in highly visible areas (e.g., passageways and berthing areas) covered with a strip of adhesive lagging patch, if available. One measurement/lagging cut should be taken, unless close proximity of fittings, surface irregularities, or suspect readings require an additional cut in the lagging in close proximity to obtain a valid reading.
9. In some cases, an accurate measurement cannot be made at a designated measurement point at any clock position due to surface irregularities (see note 1 at bottom of data

sheets), or due to inaccessibility/location of the pipe (see note 2 at bottom of sheets), or due to close proximity of pipe fittings (see note 3 at bottom of data sheets), in these instances “note 1”, “note 2”, or “note 3” should be written in all four spaces for that measurement point.

10. In isolated cases, measurements cannot be taken because a measurement point either no longer exists or is no longer relevant because the pipe has been capped at that point, in which case “capped” should be written in all spaces for that measurement point. Similarly, usually on the weather deck and involving CHT piping, a few measurement points may be covered with Passive Countermeasure System (PCMS) material. DO NOT CUT THIS MATERIAL! Enter “PCMS” in the four data blocks for these measurement points.
11. At times, uneven, layered or blistered paint on piping, whether lagged or not, may create superficial surface irregularities, making it difficult to obtain valid readings, even for UT meters designed to read through paint, in which case chipping and/or wire-brushing of the paint may be required to obtain valid readings.

Any additional “Lessons Learned” that would be helpful to future teams would be very much appreciated and should be directed to Code 921.

SHIP SYSTEM	SUBSYSTEM	MRC CODE
Shipboard Piping Systems		R-

SYSTEM	EQUIPMENT	RATES	M/H
	System Piping	GS-11/12	24.0

TOTAL M/H
24.0
ELAPSED TIME

MAINTENANCE REQUIREMENT DESCRIPTION
1. Conduct TARGET assessment procedure for ultrasonic testing of piping systems.

SAFETY PRECAUTIONS
1. Forces afloat comply with NAVOSH Program Manual for Forces Afloat, OPNAVINST 5100.19 series.

TOOLS, PARTS, MATERIALS, TEST EQUIPMENT

TEST EQUIPMENT
1. Ultrasonic test meter

MATERIALS
1. [1749] Lubricating compound, silicone Hazardous Material User's Guide (HMUG) Group 11, Disposal Method 1

TOOLS
1. [0196] Brush, wire, scratch, Carbon steel, 14-1/2"
2. [0611] Hammer, hand, Scaling, 1 LB
3. [0721] Knife, pocket, Electricians
4. [2271] Flashlight, Type 3, style 1, explosive proof
5. [2384] Tape, measuring, 1/2" steel, 72", push-pull rewind

MISCELLANEOUS
1. [1365] NSTM Chapter 505
2. System UT plans or System EOSS diagram
3. Teflon probe covers

NOTE: Numbers in brackets can be referenced to Standard PMS Materials Identification Guide (SPMIG) for stock number identification.

PAGE 1 OF 6

PROCEDURE

NOTE 1: Total man-hours listed are for accomplishment per system based on a DD class ship. Number of personnel and total man-hours may require adjustment on other class ships.

NOTE 2: Accomplish either before availability, after availability, or before deployment.

DISTRIBUTION STATEMENT D
Distribution authorized to DOD components and DOD contractors only; critical technology; August 1997. Other requests for this document shall be referred to Naval Sea Systems Command (SEA 04TD). Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

87 AAAA N

LOCATION	DATE
	August 1997

MAINTENANCE REQUIREMENT CARD (MRC)
OPNAV 4790 (REV. 2-82)

HAZARDOUS MATERIALS CONTROL STATEMENT (U)

The Hazardous Material Users Guide (HMUG), OPNAV P-45-110-91, provides additional control measures, precautions, personal protective equipment (PPE), and spill controls for the hazardous material(s) identified in the Tools, Parts, Materials, Test Equipment block.

PROCEDURE (Contd)

NOTE 3: Ultrasonic testing shall be accomplished on sections of the piping system located on 2nd Deck and below in the following locations:

a. All elbows, tees and bends. (Special attention shall be given to the outside radius).
b. Piping low points.
c. Areas requested to be surveyed by Port Engineer or ship's CHENG.

NOTE 4: The minimum allowable wall thickness for any piping system shall not be less than .050 inch as per NSTM section 505.

NOTE 5: Do not take UT readings on sil-brazed fittings. Sil-brazed fitting materials are porous and will not provide true readings.

NOTE 6: When conducting UT assessment of steam system piping or other high temperature systems, use teflon style probe covers with silicon lubricant. UT assessment of high temperature systems is best accomplished when system has been inactive for 8 hrs.

CAUTION: Those personnel who are in contact with wastewater, or assess wastewater treatment plants, should keep basic immunizations current. Immunizations required include typhoid, polio, and tetanus.

CAUTION: Personnel shall exercise extreme care when performing UT assessments on active steam piping and other high temperature systems.

1. **Conduct TARGET Assessment Procedure for Ultrasonic Testing of Piping Systems.**
   a. Prepare the pipe or tube to be assessed by removing all rust, scale, and paint to produce a moderately bright metal surface. (On insulated/lagged piping, use a utility knife to cut a triangular flap in the insulation/lagging in the area to be tested. Upon completion of testing in that area, reinsert the flap back into place.)
   b. Calibrate the ultrasonic test meter. The meter shall be calibrated to read within .005 inch of the test block thickness.

AAAA

N

PROCEDURE (Contd)

c. Take one reading at the bottom of piping/tubing. Where applicable, a second reading at a 90° interval around the circumference of the pipe shall be taken on the outside radius where flow is turbulent. When flow through a tee is supplied from the center run and discharges through either branch, readings shall be taken at the bottom and the back end of the tee (the wall of the tee that the flow discharges against).

d. Record all readings taken on UT plans or EOSS diagrams at the location where the readings were taken.

e. Compare recorded readings against the minimum allowable wall thickness values indicated in UT Piping Data Tables. When readings are at or below the minimum allowable wall thickness values indicated in the tables, or if marginal readings that may drop below the minimum prior to the next scheduled overhaul are indicated, continue surveying along the run of piping until satisfactory readings are indicated on both sides of the deteriorated sections. Measure and record the length and location of the deteriorated sections, as well as the size and material of the pipe. Report all discrepancies identified on applicable TARGET discrepancy reporting forms (2-K or Material Assessment Form).

f. At the completion of the system survey, the lowest recorded reading at each test point shall be recorded onto two (2) clean plans/diagrams. One shall be turned in with the system test report and the other shall be retained for analysis.

PROCEDURE (Contd)

UT PIPING DATA TABLES

NOTE:

1. The Design thickness listed is for reference purposes only. This figure will vary between classes and between ships within a class. The min wall thickness listed has been calculated based on NSTM section 505 requirements.
2. Some classes may use carbon steel for Fuel Oil systems. The min wall thicknesses listed for CRES apply.
3. The minimum allowable wall thickness for copper tubing 4" and below is .050".

FUEL OIL FILL AND TRANSFER SYSTEM				
NOM PIPE SIZE	OUT DIA	MATERIAL	DES THKNESS	MIN THKNESS
10"	10.75	CRES	.365	.057
8"	8.625	CRES	.322	.050
6"	6.625	CRES	.280	.050
6"	6.625	CU/NI 70/30	.134	.055
5"	5.563	CRES	.258	.050
5"	5.563	CU/NI 70/30	.125	.050
4"	4.500	CRES	.237	.050
4"	4.500	CU/NI 90/10	.109	.050
3"	3.500	CRES	.216	.050
2.5"	2.875	CRES	.203	.050
2.5"	2.875	CU/NI 70/30	.083	.050
2"	2.375	CRES	.154	.050
2"	2.375	CU/NI 90/10	.083	.050
1.5"	1.900	CU/NI 90/10	.072	.050
1.25"	1.660	CRES	.140	.050
1"	1.315	CRES	.133	.050

PROCEDURE (Contd)

BOTTOM BLOW PIPING				
NOM PIPE SIZE	OUT DIA	MATERIAL	DES THKNESS	MIN THKNESS
2"	2.375	CS	.343	.130
1"	1.315	NI/CU	.179	.115
.75"	1.050	NI/CU	.154	.115

AUX SW, CHT, MN DRAINAGE, JP-5 AND FIREMAIN SYS				
NOM PIPE SIZE	OUT DIA	MATERIAL	DES THKNESS	MIN THKNESS
8"	8.625	CU/NI 90/10	.148	.077
6"	6.625	CU/NI 90/10	.134	.059
5"	5.563	CU/NI 90/10	.125	.050
4"	4.500	CU/NI 90/10	.109	.050
3"	3.500	CU/NI 90/10	.095	.050
2.5"	2.875	CU/NI 90/10	.083	.050
2"	2.375	CU/NI 90/10	.083	.050
1.5"	1.900	CU/NI 90/10	.072	.050
1"	1.315	CU/NI 90/10	.065	.050

AAAA

N

PROCEDURE (Contd)

DISPOSAL METHODS FOR HAZARDOUS MATERIAL/WASTE IDENTIFIED IN THE TOOLS, PARTS, MATERIAL, AND TEST EQUIPMENT BLOCK

Method 1: Containerize waste in original container, if possible, or use standard container as listed in Appendix B3-D of OPNAVINST 5100.19B, "Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat" and Naval Ships' Technical Manual (NTSM) S9086-T8-STM-010/CH-593, Pollution Control. Store in accordance with OPNAVINST 5100.19B and NSTM Chapter 670. Do not mix chlorinated solvents with nonchlorinated solvents. Mark, label, or tag the container, according to ship procedures, with specific contents and any information on the contaminants. This information must also be provided on DD Form 1348-1 at time of offloading.

USS WHIDBEY ISLAND (LSD-41)

SYSTEM	SWLIN	EIC	APL	RIN
FIREMAIN PIPING	52111	N/A	N/A	

WORK CENTER	JSN	EQUIPMENT FUNCTIONAL DESCRIPTION	IDENT/SERIAL	LOCATION
				MCHRY SPACES

DATE ASSESSMENT COMPLETED: 20 JUNE 1999

PROCEDURES USED: SUPSHIP PORTS U/T FOR PIPING SYS

WHAT PORTIONS OF THE EQUIPMENT OR PROCEDURES COULD NOT BE ASSESSED?:
OUTSIDE MCHRY SPACES

SIGNIFICANT FINDINGS:
SNAPSHOTS U/T PIPING INSPECTION OF THE F/M PIPING REVEALED NO DISCREPANCIES.

CORRECTIVE ACTION TAKEN/RECOMMENDED:
N/A

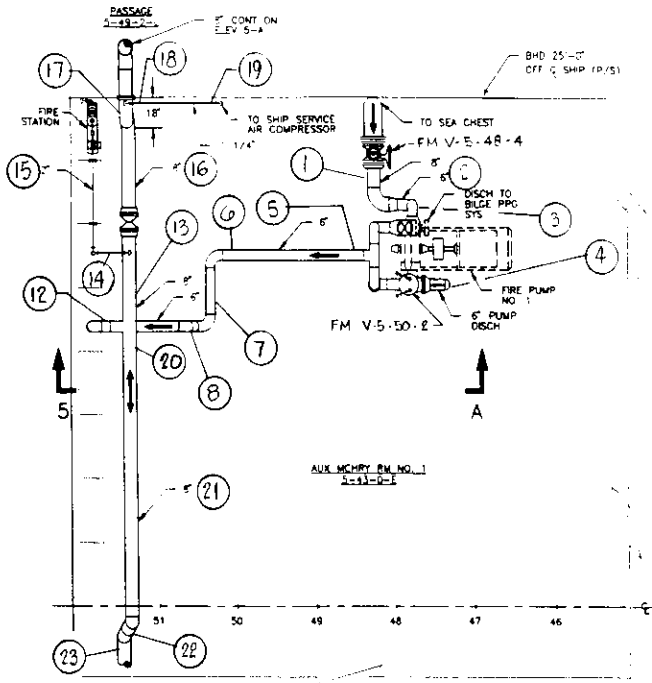
OVERALL CONDITION OF EQUIPMENT (CIRCLE ONE):

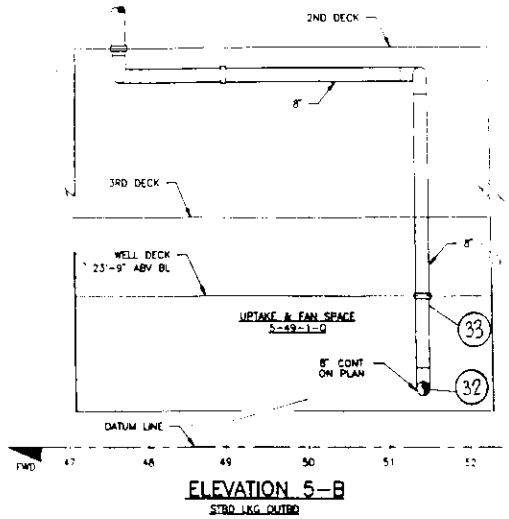
(OPERATIONAL) NON-OPERATIONAL REDUCED CAPABILITY

OTHER (EXPLAIN): N/A

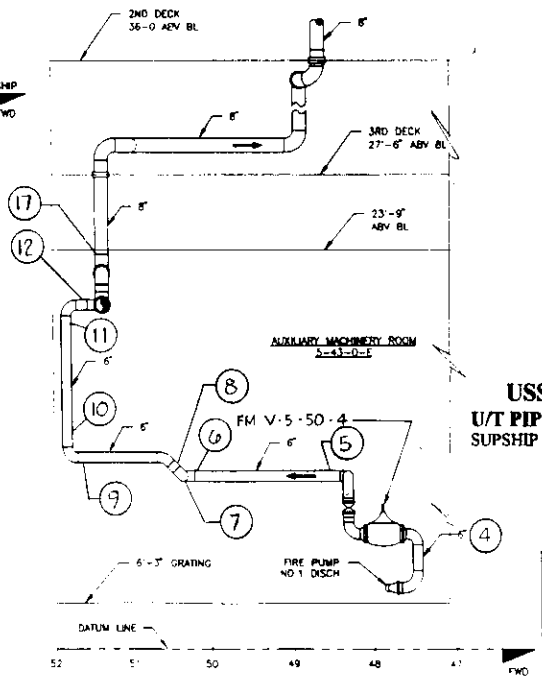
NUMBER OF PERSONNEL TRAINED: N/A TRAINING MANHOURS: N/A

ASSESSED BY/POC: AGUILAR, J. / MELVIN, M CODE: 221.4
PHONE (DSN) 961-4001 (COMM) (757) 396-4001

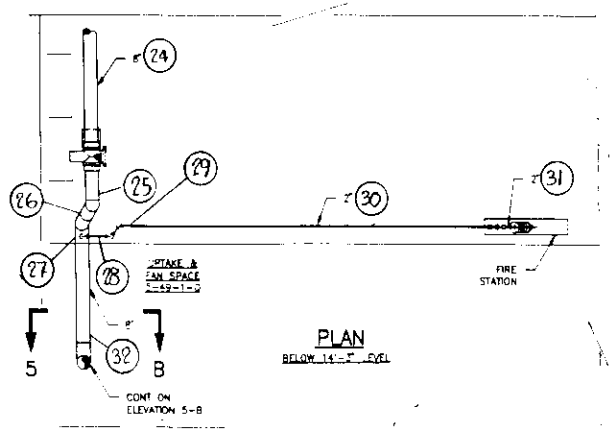




ELEVATION 5-B
STBD LKG OUTBD



ELEVATION 5-A
PORT LKG OUTBD



PLAN
BELOW 14'-7" EVEL

TABLE OF PIPE THICKNESS

NOMINAL SIZE	OUTSIDE DIAMETER	MATERIAL	DESIGN THICKNESS	MINIMUM ALLOWABLE
8"	8.625"	CNA 90/10	.151"	[redacted]
6"	6.625"	CNA 90/10	.134"	[redacted]
2"	2.375"	CNA 90/10	.083"	[redacted]
1 1/2"	1.900"	CNA 90/10	.072"	[redacted]
1 1/4"	1.660"	CNA 90/10	.072"	[redacted]
1"	1.315"	CNA 90/10	.065"	[redacted]

GENERAL NOTES

1. THIS ULTRASONIC THICKNESS TEST PLAN WAS DEVELOPED TO RECORD PIPE THICKNESS READINGS.
2. THE DRAWING WAS DEVELOPED FROM A STANDARD LSD 41 CLASS PIPING ARRANGEMENT DRAWING
3. ANY DEVIATIONS FROM THIS DRAWING OBSERVED DURING AN INSPECTION SHOULD BE NOTED & THE DRAWING SHOULD BE MODIFIED.

REFERENCES

521-4800489
521-4800490
521-4800491

USS WHIDBEY ISLAND (LSD-41)

U/T PIPING MEASUREMENT POINT DIAGRAM

SUPSHIP C&R USN PORTS VA VISIT DATES 17-20 June 1999

FIGURE 5

ULTRASONIC TEST PLAN – PIPING

LSD 41 CLASS

FIREMAIN PIPING SYSTEM
2ND DECK AND BELOW

SCALE : NONE | SHEET 1 OF 4

PLOTSCALE = 1.48

C:\LSD41UT\FM

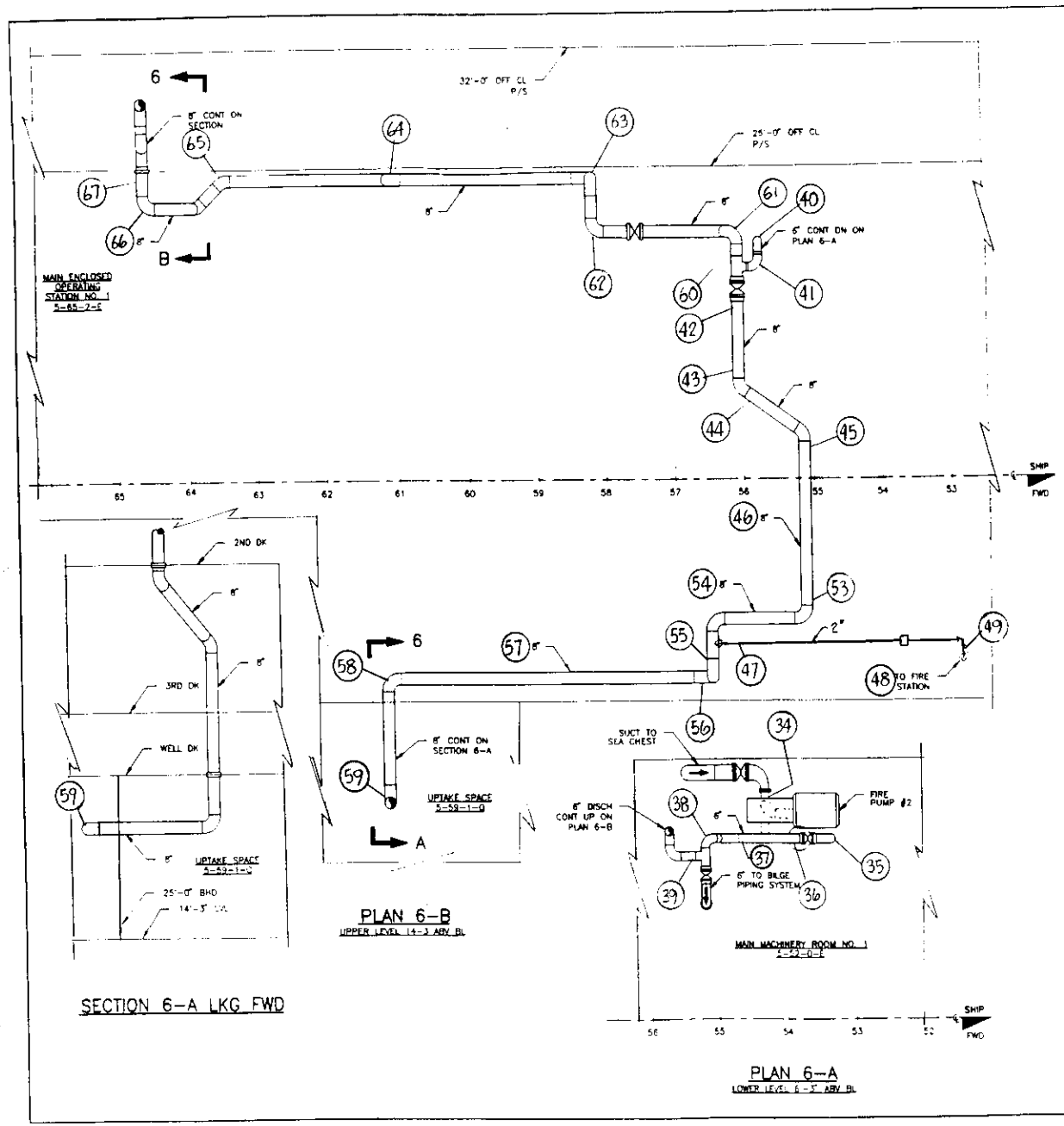


TABLE OF PIPE THICKNESS

NOMINAL SIZE	OUTSIDE DIAMETER	MATERIAL	DESIGN THICKNESS	MINIMUM ALLOWABLE
8"	8.625"	CNA 90/10	.151"	[redacted]
6"	6.625"	CNA 90/10	.134"	[redacted]
2"	2.375"	CNA 90/10	.083"	[redacted]
1 1/2"	1.900"	CNA 90/10	.072"	[redacted]
1 1/4"	1.660"	CNA 90/10	.072"	[redacted]
1"	1.315"	CNA 90/10	.065"	[redacted]

GENERAL NOTES

1. THIS ULTRASONIC THICKNESS TEST PLAN WAS DEVELOPED TO RECORD PIPE THICKNESS READINGS
2. THE DRAWING WAS DEVELOPED FROM A STANDARD LSD 41 CLASS PIPING ARRANGEMENT DRAWING.
3. ANY DEVIATIONS FROM THIS DRAWING OBSERVED DURING AN INSPECTION SHOULD BE NOTED & THE DRAWING SHOULD BE MODIFIED

FIGURE 6

ULTRASONIC TEST PLAN – PIPING

LSD 41 CLASS

FIREMAIN PIPING SYSTEM
2ND DECK AND BELOW

SCALE : NONE

SHEET 2 OF 4

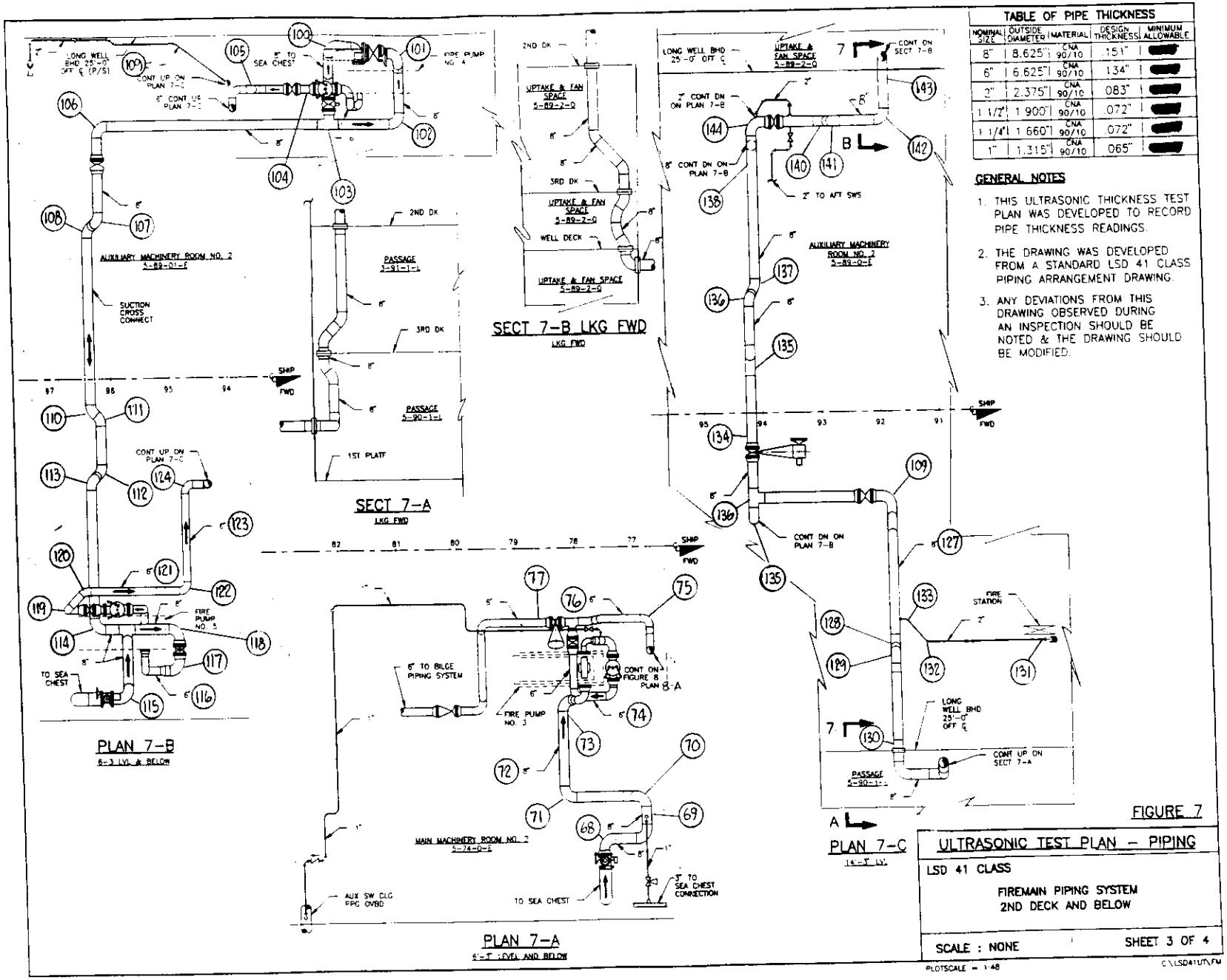


TABLE OF PIPE THICKNESS				
NOMINAL SIZE	OUTSIDE DIAMETER	MATERIAL	DESIGN THICKNESS	MINIMUM ALLOWABLE
8"	8.625"	CNA 90/10	.151"	
6"	6.625"	CNA 90/10	.134"	
2"	2.375"	CNA 90/10	.083"	
1 1/2"	1.900"	CNA 90/10	.072"	
1 1/4"	1.660"	CNA 90/10	.072"	
1"	1.315"	CNA 90/10	.065"	

GENERAL NOTES

1. THIS ULTRASONIC THICKNESS TEST PLAN WAS DEVELOPED TO RECORD PIPE THICKNESS READINGS.
2. THE DRAWING WAS DEVELOPED FROM A STANDARD LSD 41 CLASS PIPING ARRANGEMENT DRAWING.
3. ANY DEVIATIONS FROM THIS DRAWING OBSERVED DURING AN INSPECTION SHOULD BE NOTED & THE DRAWING SHOULD BE MODIFIED.

FIGURE 7

ULTRASONIC TEST PLAN – PIPING

LSD 41 CLASS

FIREMAIN PIPING SYSTEM
2ND DECK AND BELOW

SCALE : NONE

SHEET 3 OF 4

PLOTSCALE = 1:48

C:\LSD41UT\FM

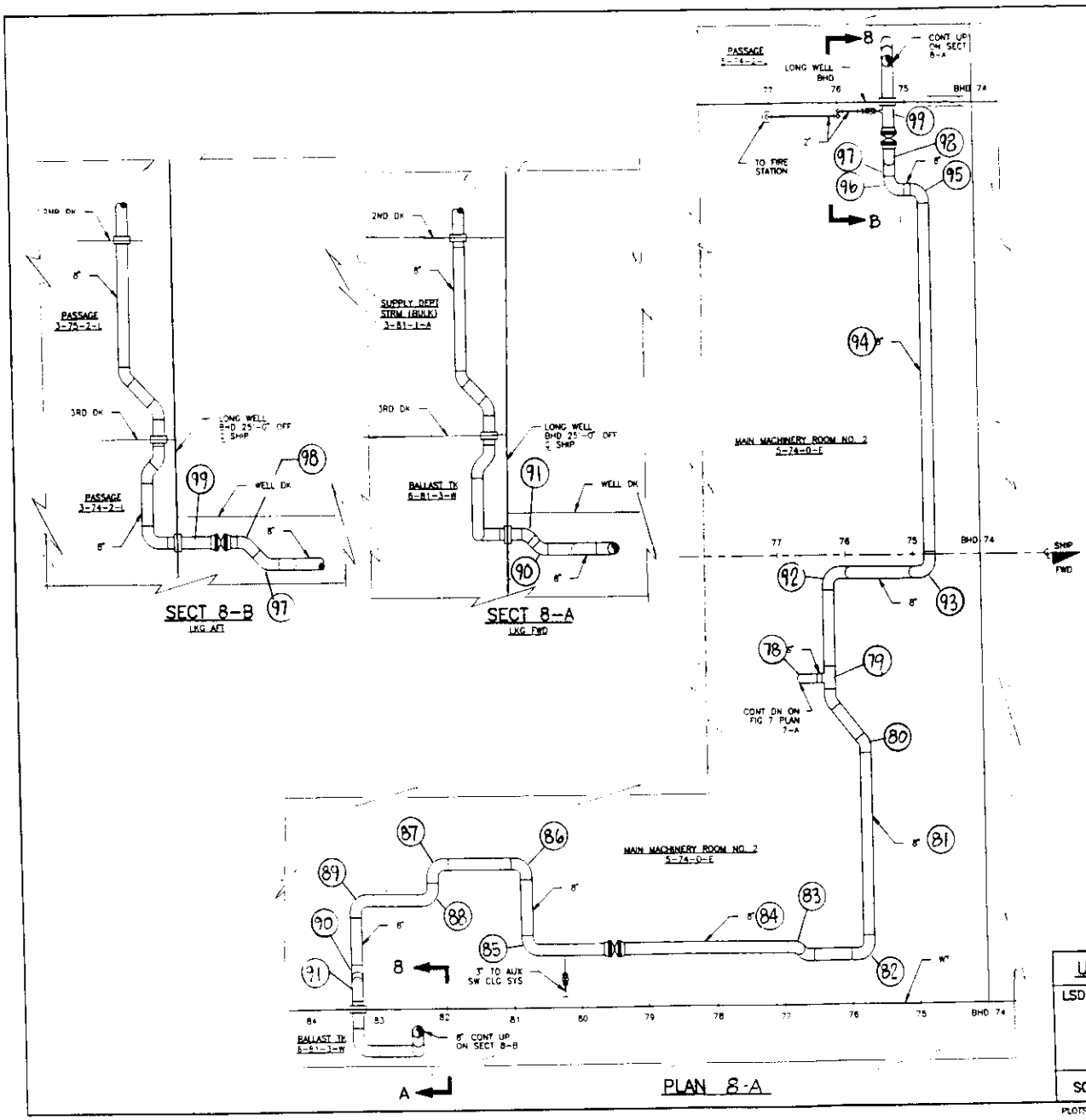


TABLE OF PIPE THICKNESS

NOMINAL SIZE	OUTSIDE DIAMETER	MATERIAL	DESIGN THICKNESS	MINIMUM ALLOWABLE
8"	8.625"	CNA 90/10	.151"	
6"	6.625"	CNA 90/10	.134"	
2"	2.375"	CNA 90/10	.083"	
1 1/2"	1.900"	CNA 90/10	.072"	
1 1/4"	1.660"	CNA 90/10	.072"	
1"	1.315"	CNA 90/10	.065"	

GENERAL NOTES

1. THIS ULTRASONIC THICKNESS TEST PLAN WAS DEVELOPED TO RECORD PIPE THICKNESS READINGS.
2. THE DRAWING WAS DEVELOPED FROM A STANDARD LSD 41 CLASS PIPING ARRANGEMENT DRAWING
3. ANY DEVIATIONS FROM THIS DRAWING OBSERVED DURING AN INSPECTION SHOULD BE NOTED & THE DRAWING SHOULD BE MODIFIED

FIGURE 8

ULTRASONIC TEST PLAN – PIPING

LSD 41 CLASS

FIREMAIN PIPING SYSTEM
2ND DECK AND BELOW

SCALE : NONE | SHEET 4 OF 4

PLOTSCALE = 1:48

C:\LSD41UT\FM

USS WHIDBEY ISLAND (LSD 41)

FIREMAIN PPG
MCHNRY SPACES

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
1	8	0.165	0.160	-	0.170	C
2	6	0.155	-	-	-	B
3	6	-	-	0.150	-	C
4	6	-	-	0.140	-	A
5	6	-	-	0.150	-	A
6	6	-	0.135	-	-	A
7	6	-	-	0.140	-	C
8	6	-	-	0.155	-	A
9	6	-	-	0.150	-	A
10	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
11	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
12	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
13	8	-	0.140	-	-	C
14	2	-	-	0.080	-	C
15	2	-	0.080	-	-	C
16	8	-	-	0.165	-	C
17	8	-	-	0.170	-	C
18	1.25	-	-	0.080	-	A
19	1.25	-	-	-	0.080	B
20	8	-	0.170	-	-	C

UT #	SIZE	12	3	6	9	VIEW
21	8	-	-	0.170	-	C
22	8	-	-	0.170	-	C
23	8	-	-	0.165	-	C
24	8	-	-	-	0.170	C
25	8	-	-	0.145	-	C
26	8	-	-	0.150	-	C
27	8	-	-	-	0.155	C
28	2	-	-	0.080	-	A
29	2	-	-	0.075	-	A
30	2	-	0.090	-	-	A
31	2	0.075	0.075	0.085	0.075	A
32	8	-	-	0.155	-	C
33	8	-	0.160	-	-	B
34	6	0.140	-	-	-	A
35	6	0.140	-	-	-	B
36	6	-	-	0.155	-	A
37	6	-	0.155	0.155	-	A
38	6	-	0.140	-	-	C
39	6	-	-	-	0.140	C
40	6	-	0.135	-	-	C

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD 41)

FIREMAIN PPG
MCHNRY SPACES

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
41	6	-	-	0.150	-	A
42	NOTE 3	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
43	8	0.160	-	-	-	C
44	8	-	-	-	0.160	C
45	8	-	-	0.160	-	C
46	8	-	-	0.175	-	C
47	2	0.100	0.100	0.095	0.095	A
48	2	-	-	0.095	-	A
49	2	0.100	0.095	0.095	0.100	B
50	NUMBER NOT USED					
51	NUMBER NOT USED					
52	NUMBER NOT USED					
53	8	-	0.160	-	-	A
54	8	-	-	0.160	-	A
55	8	0.140	-	-	-	C
56	8	-	-	0.140	-	A
57	8	-	-	0.160	-	A
58	8	-	-	-	0.145	C
59	8	-	-	0.150	-	B
60	8	-	-	-	0.150	C

UT #	SIZE	12	3	6	9	VIEW
61	8	-	-	0.140	-	A
62	8	-	0.160	-	-	A
63	8	0.160	-	-	-	B
64	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
65	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
66	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
67	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
68	8	-	-	-	0.175	A
69	8	0.150	-	-	-	C
70	8	0.150	-	-	-	C
71	8	0.150	-	-	-	A
72	8	0.155	-	-	-	C
73	8	-	0.145	-	-	C
74	6	0.125	-	-	-	C
75	6	0.135	-	-	0.140	C
76	6	0.140	-	0.135	0.135	A
77	6	0.150	0.150	-	-	A
78	6	0.130	-	-	-	B
79	8	-	0.140	-	-	C
80	8	-	0.150	-	-	C

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD 41)

FIREMAIN PPG
MCHNRY SPACES

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
81	8	-	0.160	-	-	C
82	8	-	0.135	-	-	A
83	8	-	-	0.150	-	A
84	8	-	-	0.160	-	A
85	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
86	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
87	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
88	8	-	0.150	-	-	A
89	8	-	0.150	-	-	C
90	8	-	-	0.150	-	C
91	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
92	8	-	-	-	0.155	A
93	8	-	0.170	-	-	A
94	8	-	-	-	0.160	C
95	8	-	-	-	0.150	C
96	8	-	0.150	-	-	C
97	8	-	-	-	0.145	C
98	8	-	-	-	0.150	C
99	8	-	-	-	0.160	C
100	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	

UT #	SIZE	12	3	6	9	VIEW
101	8	0.155	-	-	-	A
102	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
103	8	0.155	0.150	-	-	A
104	6	-	0.160	-	-	A
105	6	-	-	0.160	-	A
106	8	0.175	0.175	-	0.175	C
107	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
108	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
109	8	-	-	0.155	-	A
110	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
111	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
112	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
113	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
114	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
115	8	0.150	-	-	-	A
116	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
117	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
118	8	0.145	-	-	0.150	A
119	6	-	-	0.135	-	B
120	6	-	-	-	0.140	A

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD 41)

FIREMAIN PPG
MCHNRY SPACES

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
121	6	-	-	-	0.135	A
122	6	-	-	0.135	-	A
123	6	-	-	0.123	-	C
124	6	-	-	-	0.135	A
125	NUMBER NOT USED					
126	NUMBER NOT USED					
127	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
128	8	-	-	0.150	-	C
129	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
130	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
131	2	0.100	0.095	0.090	0.095	A
132	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
133	2	-	-	0.095	-	A
134	8	-	-	0.160	-	C
135	8	-	-	0.160	-	C
136	8	-	0.160	-	-	C
137	8	-	-	0.150	-	C
138	8	-	-	0.155	-	C
139	NUMBER NOT USED					
140	8	-	-	0.155	-	A

UT #	SIZE	12	3	6	9	VIEW
141	8	-	-	0.150	-	A
142	8	-	-	-	0.155	A
143	8	-	-	0.145	-	C
144	8	-	-	0.150	-	A

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD-41)

SYSTEM	SWLIN	EIC	APL	RIN
AUX SEAWTR CLG	52411	N/A	N/A	

WORK CENTER	JSN	EQUIPMENT FUNCTIONAL DESCRIPTION	IDENT/SERIAL	LOCATION
				MCHRY SPACES

DATE ASSESSMENT COMPLETED: 20 JUNE 1999

PROCEDURES USED: SUPSHIP PORTS U/T FOR PIPING SYS

WHAT PORTIONS OF THE EQUIPMENT OR PROCEDURES COULD NOT BE ASSESSED?:
OUTSIDE MCHRY SPACES

SIGNIFICANT FINDINGS:
SNAPSHOTS U/T PIPING INSPECTION OF THE AUX S/W CLG REVEALED NO DISCREPANCIES.

CORRECTIVE ACTION TAKEN/RECOMMENDED:
N/A

OVERALL CONDITION OF EQUIPMENT (CIRCLE ONE):

(OPERATIONAL) NON-OPERATIONAL REDUCED CAPABILITY

OTHER (EXPLAIN): N/A

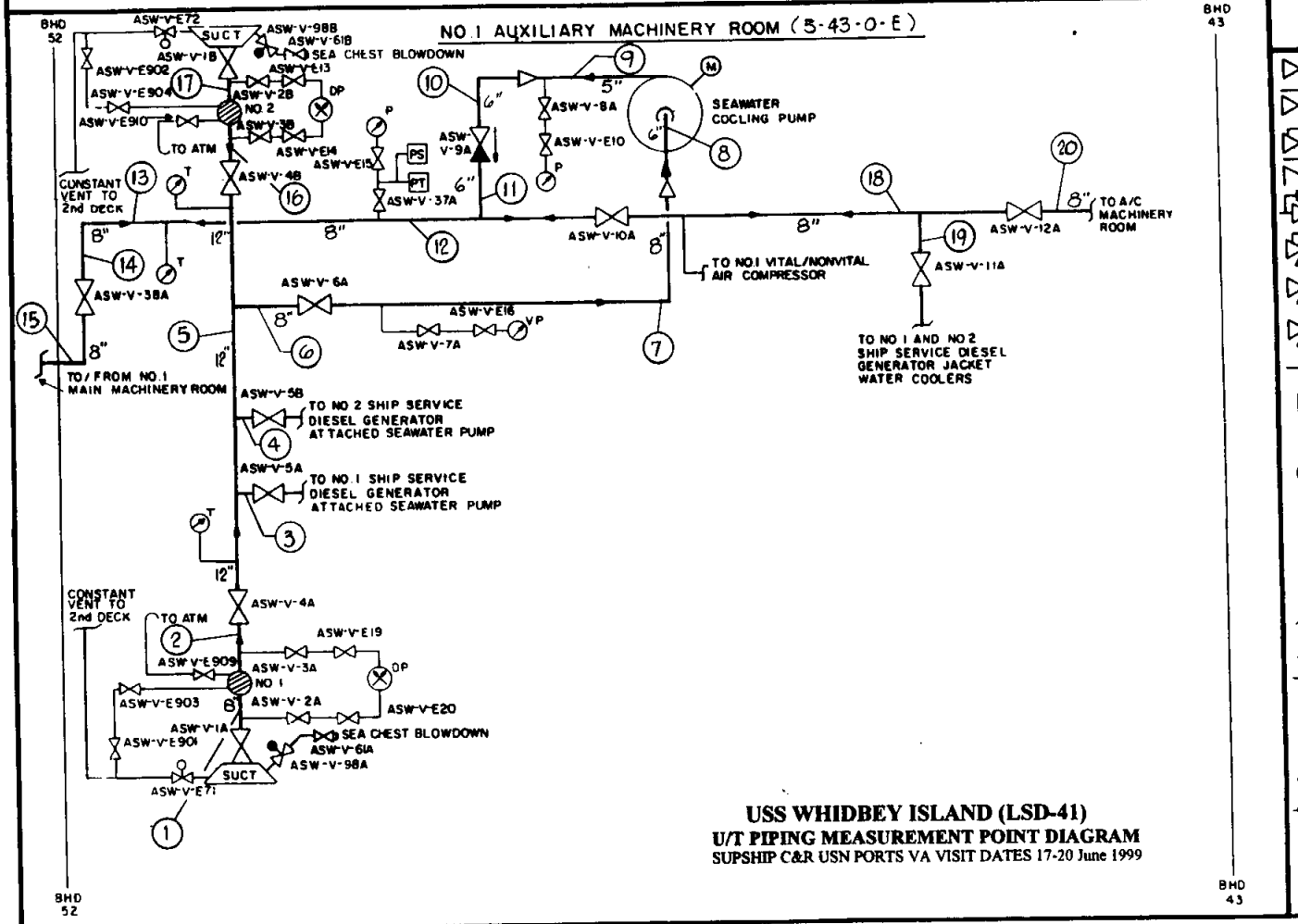
NUMBER OF PERSONNEL TRAINED: N/A TRAINING MANHOURS: N/A

ASSESSED BY/POC: PALAZZO, G / PRENDERGAST, B. CODE: 221

PHONE (DSN) 961 - 4001 (COMM) (757) 396 - 4001

DIAGRAM FOR AUXILIARY MACHINERY COOLING WATER SYSTEM

SD NO. DAMW



USS WHIDBEY ISLAND (LSD-41)
U/T PIPING MEASUREMENT POINT DIAGRAM
SUPSHIP C&R USN PORTS VA VISIT DATES 17-20 June 1999

LEGEND

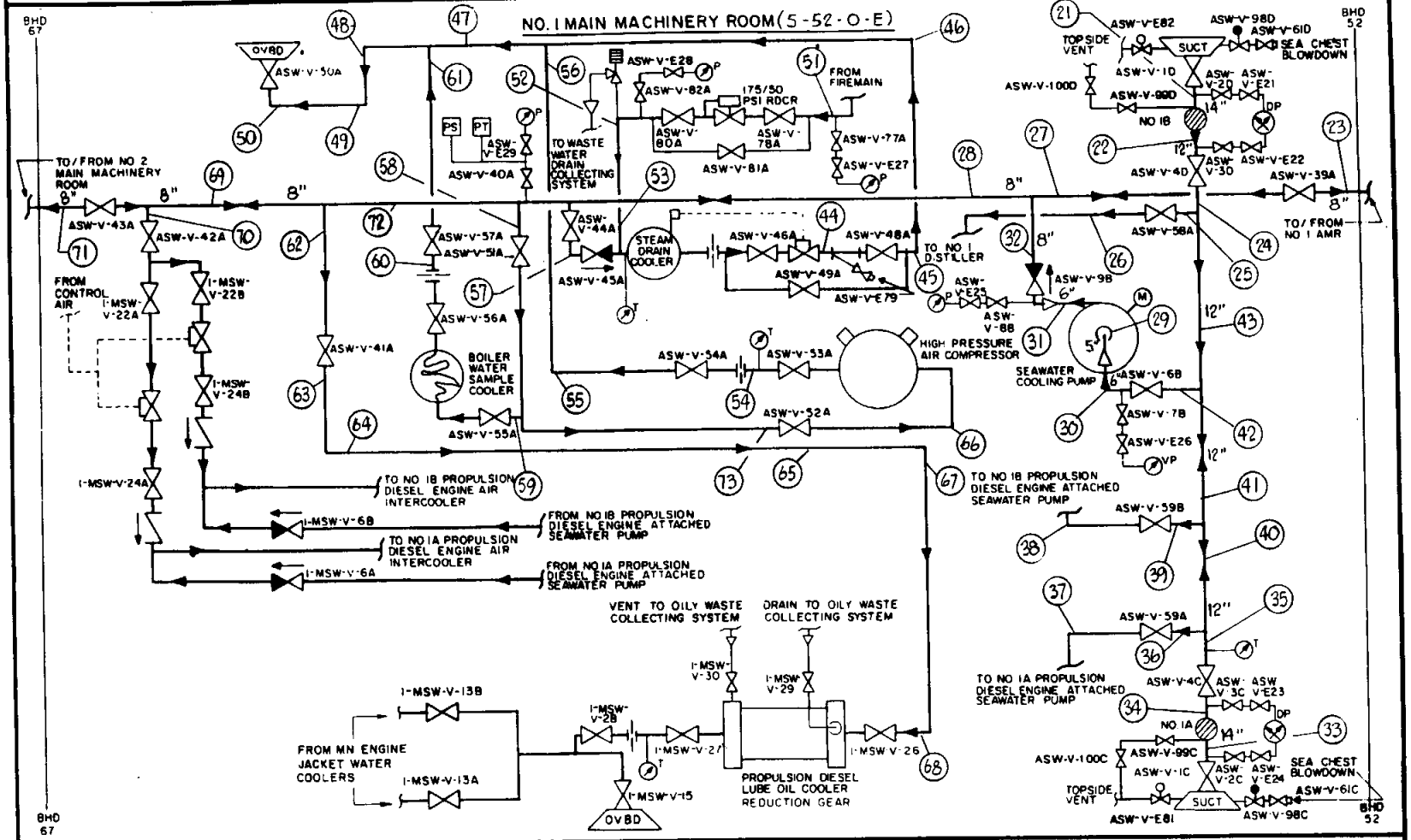
- STOP VALVE
- STOP CHECK VALVE
- THERMOSTATIC VALVE
- SWING CHECK VALVE
- SYSTEM SENSING PRESSURE REGULATING
- THERMOSTATIC CROSS CONNECT VALVE
- RELIEF VALVE
- TEMPERATURE REGULATING VALVE
- ORIFICE
- PS PRESSURE SWITCH
- PT PRESSURE TRANSDUCER
- DIFFERENTIAL PRESSURE GAUGE
- P PRESSURE GAUGE
- T TEMPERATURE GAUGE
- VP VACUUM GAUGE
- M MOTOR DRIVEN
- G GEAR DRIVEN
- PENETRATION
- SIMPLEX STRAINER
- FUNNEL
- SEA CHEST
- PUMP CENTRIFUGAL

OVBD OVERBOARD
SUCT SUCTION
AMR AUXILIARY MACHINERY ROOM

CODE: DAMW/0008/063098

DIAGRAM FOR AUXILIARY MACHINERY COOLING WATER SYSTEM

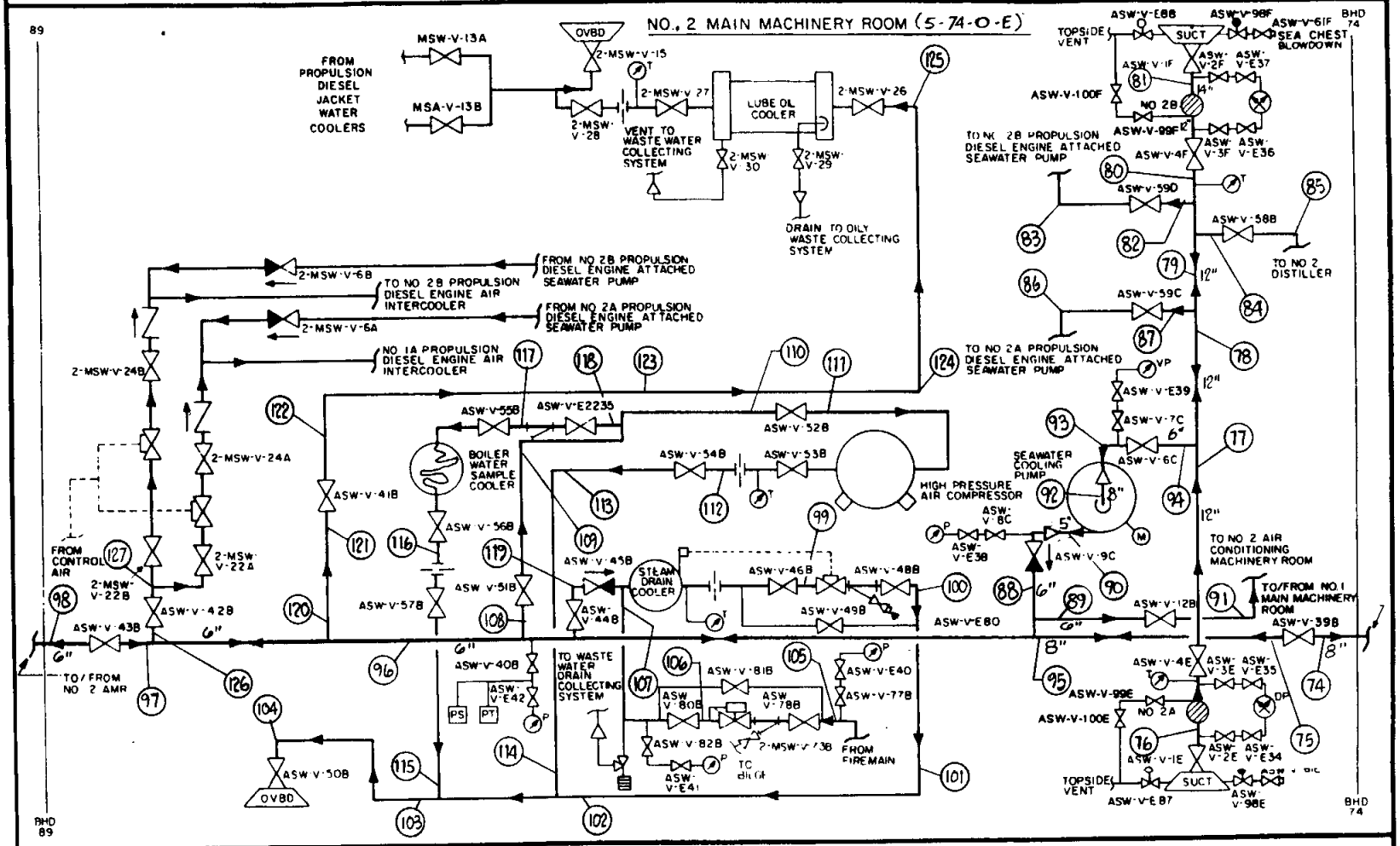
SD. NO. DAMW



CODE: DAMW/0008/063098

DIAGRAM FOR AUXILIARY MACHINERY COOLING WATER SYSTEM

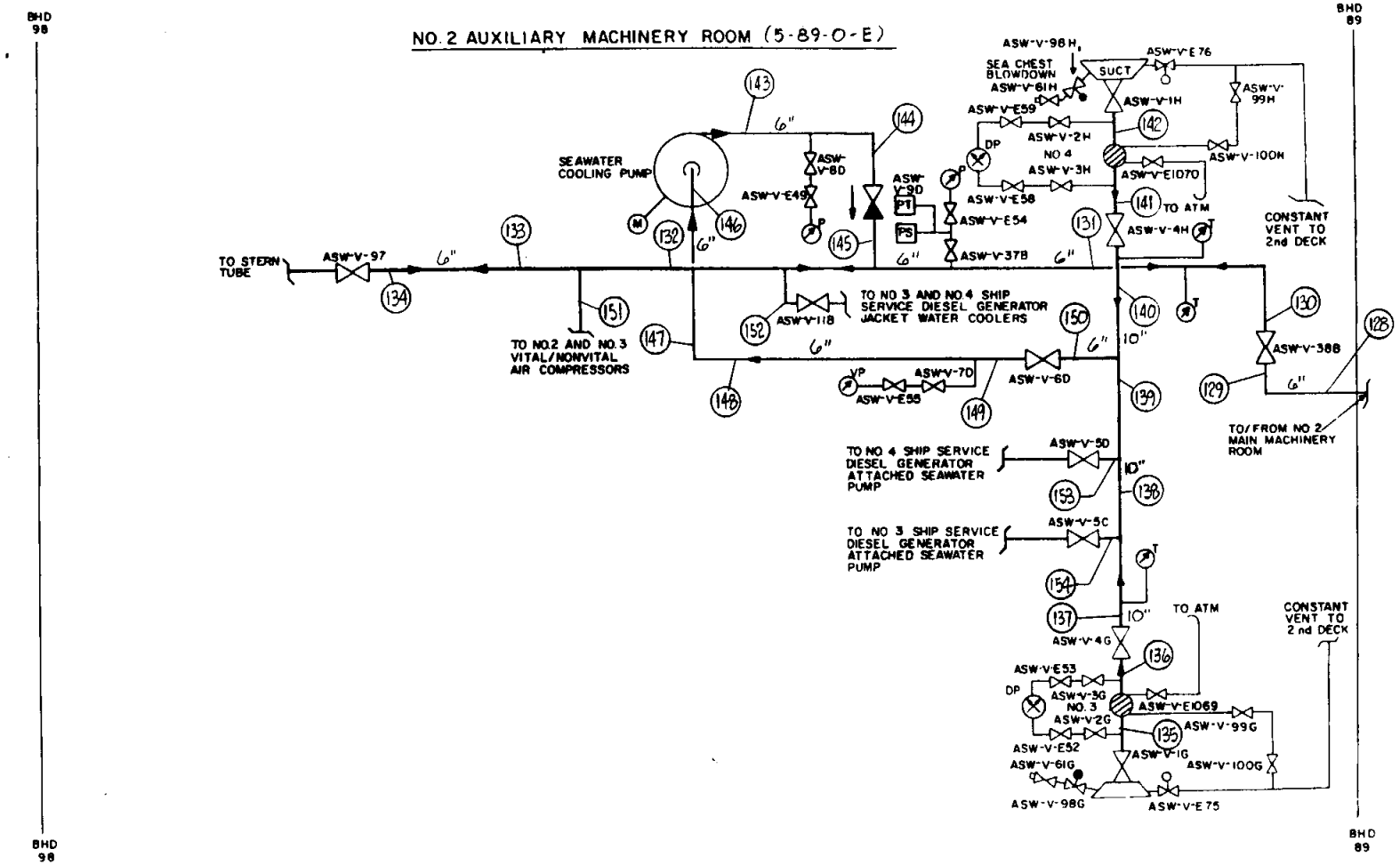
SD NO DAMW



CODE: DAMW/0008/063098

DIAGRAM FOR AUXILIARY MACHINERY COOLING WATER SYSTEM

SD NO. DAMW



CODE: DAMW/0008/063098

PAGE 4 OF 4

USS WHIDBEY ISLAND (LSD 41)

AUXILIARY SEAWATER COOLING MCHNRY SPACES

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
1	12	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
2	12	0.240	0.230	0.225	0.240	B
3	SHIPYARD WORKING					
4	5	0.115	0.125	0.125	0.125	B
5	12	0.260	0.265	0.260	0.260	B
6	6	0.150	0.150	NOTE 2	0.150	A
7	6	0.125	0.120	NOTE 2	0.130	A
8	6	0.125	0.125	0.130	0.125	B
9	5	0.135	0.135	0.140	0.140	B
10	8	0.140	0.140	0.135	0.145	B
11	8	0.135	0.135	0.135	0.135	A
12	10	0.195	0.195	0.195	0.195	A B C
13	NUMBER NOT USED					
14	10	0.175	0.180	0.180	0.170	C
15	10	0.175	0.175	0.165	0.175	C
16	12	0.205	0.205	0.210	0.225	B
17	12	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
18	SHIPYARD WORKING					
19	SHIPYARD WORKING					
20	SHIPYARD WORKING					

UT #	SIZE	12	3	6	9	VIEW
21	12	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
22	12	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
23	10	0.185	0.185	0.180	0.185	A
24	12	0.240	0.240	0.235	0.230	B
25	NUMBER NOT USED					
26	NUMBER NOT USED					
27	10	0.195	0.195	0.190	0.195	A
28	10	0.180	0.175	0.175	0.170	C
29	6	0.125	0.125	0.130	0.125	B
30	6	0.140	0.125	0.130	0.130	A
31	5	0.110	0.105	0.110	0.105	A
32	8	0.135	0.140	0.140	0.140	B
33	12	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
34	12	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
35	12	0.235	0.240	0.245	0.235	B
36	8	0.150	0.150	0.150	0.150	A
37	8	0.160	0.160	0.160	0.165	A
38	8	NOTE 2	0.150	0.150	0.140	A
39	8	0.160	0.160	0.160	0.165	A
40	12	NOTE 2	NOTE 2	NOTE 2	NOTE 2	

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD 41)

AUXILIARY SEAWATER COOLING MCHNRY SPACES

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
41	12	NOTE 2	NOTE 2	NOTE 2	NOTE 2	B
42	6	0.140	0.135	NOTE 2	0.140	A
43	12	0.230	0.240	0.220	0.230	B
44	3	0.105	0.110	0.105	0.100	C
45	NUMBER NOT USED					
46	NUMBER NOT USED					
47	NUMBER NOT USED					
48	NUMBER NOT USED					
49	3	0.100	0.095	0.095	0.110	A
50	4	0.115	0.115	0.115	0.115	A
51	2.5	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
52	2.5	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
53	NUMBER NOT USED					
54	2.5	-	-	-	0.070	A
55	2.5	0.070	0.065	0.065	0.065	B
56	2.5	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
57	3	0.105	0.100	0.105	0.105	C
58	NUMBER NOT USED					
59	0.5	PIPING TO SMALL TO READ				
60	0.5	PIPING TO SMALL TO READ				

UT #	SIZE	12	3	6	9	VIEW
61	3	0.100	0.100	0.095	0.100	C
62	2.5	-	-	-	0.080	C
63	NUMBER NOT USED					
64	NUMBER NOT USED					
65	NUMBER NOT USED					
66	1.5	-	-	0.075	-	A
67	2.5	-	-	0.090	-	A
68	2.5	0.090	-	-	-	C
69	10	0.180	0.180	0.180	0.180	B
70	2.5	0.075	0.075	0.085	0.085	A
71	10	NOTE 1	NOTE 1	NOTE 1	NOTE 1	
72	NUMBER NOT USED					
73	1.5	-	0.060	-	-	C
74	10	NOTE 1	NOTE 1	NOTE 1	NOTE 1	
75	10	-	-	-	0.195	B
76	12	NOTE 1	NOTE 1	NOTE 1	NOTE 1	
77	12	0.245	0.240	-	0.240	B
78	12	0.235	0.230	-	0.240	B
79	12	-	-	0.185	-	B
80	12	-	0.180	-	-	B

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD 41)

AUXILIARY SEAWATER COOLING MCHNRY SPACES

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
81	14	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
82	8	-	-	0.165	-	A
83	8	-	0.165	-	-	A
84	8	-	-	0.165	-	A
85	8	-	0.165	-	-	A
86	10	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
87	10	-	0.165	-	-	A
88	5	0.115	0.130	0.120	0.120	A
89	6	0.115	0.130	0.120	0.120	A
90	5	0.120	0.140	0.125	0.120	B
91	6	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
92	6	0.130	0.130	0.140	0.130	B
93	6	0.130	0.130	-	0.130	A
94	6	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
95	10	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
96	10	0.190	0.190	-	0.190	A
97	10	0.185	0.185	0.180	0.180	A
98	10	0.175	0.175	0.170	0.160	A
99	3	0.105	0.100	0.100	0.100	A
100	3	NOTE 3	NOTE 3	NOTE 3	NOTE 3	

UT #	SIZE	12	3	6	9	VIEW
101	3	-	-	-	0.100	C
102	NUMBER NOT USED					
103	3	0.095	0.115	0.125	0.105	B
104	3	0.135	0.115	0.100	0.115	B
105	NUMBER NOT USED					
106	3	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
107	3	-	-	-	0.115	B
108	NUMBER NOT USED					
109	NUMBER NOT USED					
110	NUMBER NOT USED					
111	NUMBER NOT USED					
112	1.5	-	-	-	0.075	C
113	1.5	0.075	0.070	0.075	0.075	A
114	1.5	0.080	0.075	0.070	0.075	B
115	3	NOTE 1	NOTE 1	NOTE 1	NOTE 1	
116	3	-	0.115	-	-	B
117	3	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
118	NUMBER NOT USED					
119	3	-	-	-	0.115	C
120	10	NOTE 2	NOTE 2	NOTE 2	NOTE 2	

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD 41)

AUXILIARY SEAWATER COOLING MCHNRY SPACES

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
121	10	0.150	0.145	0.150	0.145	B
122	10	0.135	0.135	0.125	0.135	A
123	10	-	-	0.135	-	C
124	10	0.140	0.140	0.140	0.140	A
125	10	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
126	6	0.150	0.145	0.135	0.150	B
127	6	0.130	0.130	0.140	0.145	B
128	NUMBER NOT USED					
129	10	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
130	10	0.185	0.180	NOTE 2	0.170	A
131	10	0.195	NOTE 2	0.200	0.200	B
132	NUMBER NOT USED					
133	2.5	0.090	0.090	0.090	0.090	A
134	2.5	0.085	0.085	0.090	0.085	A
135	10	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
136	10	0.250	NOTE 2	0.250	0.255	B
137	10	0.260	0.260	0.260	NOTE 2	B
138	10	0.185	0.185	0.185	0.185	B
139	NUMBER NOT USED					
140	10	0.265	0.260	0.265	0.260	B

UT #	SIZE	12	3	6	9	VIEW
141	12	NOTE 3	NOTE 3	NOTE 3	NOTE 3	
142	12	0.265	0.265	0.265	0.265	B
143	6	0.125	0.125	0.125	0.130	B
144	8	NOTE 1	NOTE 1	NOTE 1	NOTE 1	
145	8	0.195	0.185	NOTE 2	0.190	B
146	6	0.120	0.120	0.115	0.120	B
147	NUMBER NOT USED					
148	NUMBER NOT USED					
149	6	0.130	0.135	0.135	0.135	A
150	6	0.125	0.130	0.130	0.135	A
151	2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
152	2.5	NOTE 1	NOTE 1	NOTE 2	NOTE 1	
153	5	0.105	0.125	0.120	0.100	C
154	6	0.115	0.115	0.115	0.110	C

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD-41)

SYSTEM	SWLIN	EIC	APL	RIN
FUEL OIL MN ENG	54111	N/A	N/A	

WORK CENTER	JSN	EQUIPMENT FUNCTIONAL DESCRIPTION	IDENT/SERIAL	LOCATION
				MCHRY SPACES

DATE ASSESSMENT COMPLETED: 20 JUNE 1999

PROCEDURES USED: SUPSHIP PORTS U/T FOR PIPING SYS

WHAT PORTIONS OF THE EQUIPMENT OR PROCEDURES COULD NOT BE ASSESSED?:
OUTSIDE MCHRY SPACES

SIGNIFICANT FINDINGS:
PER SNAPSHOTS U/T PIPING INSPECTION IN No. 1 MAIN MCHRY RM, THE EXISTING 2½" IPS F/O DISCH PP FROM F/O SVCE TK 6-59-4-F, REVEALED A MARGINAL PIPE WALL THK OF .080" VICE .203" ADJACENT TO THE TANK PIPE PENETRATION.

CORRECTIVE ACTION TAKEN/RECOMMENDED:
N/A
SHIPFORCE AND PORT ENGR WERE INFORMED OF ABOVE PIPE MARGINAL WALL THK.

OVERALL CONDITION OF EQUIPMENT (CIRCLE ONE):

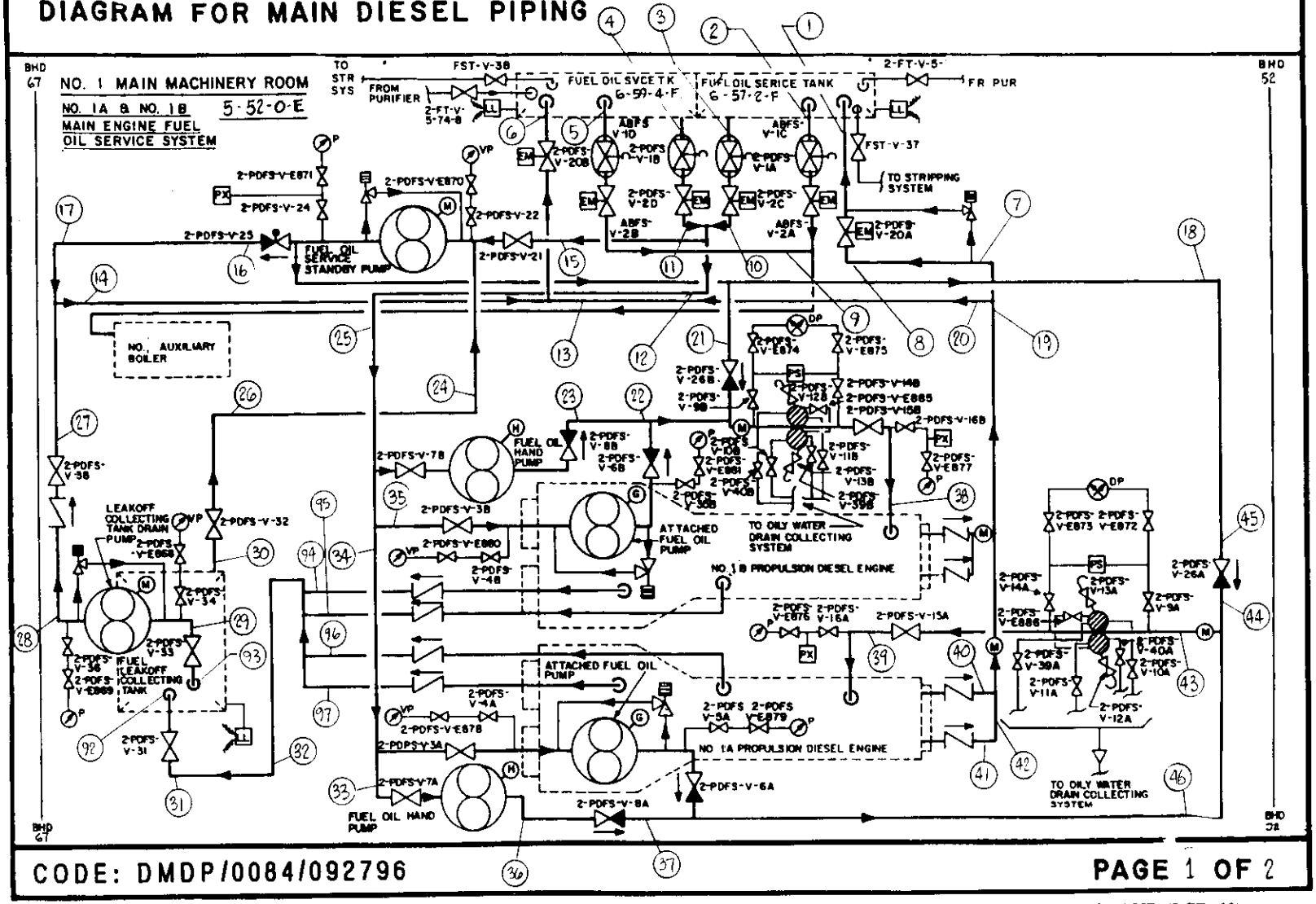
(OPERATIONAL) NON-OPERATIONAL REDUCED CAPABILITY

OTHER (EXPLAIN): N/A

NUMBER OF PERSONNEL TRAINED: N/A TRAINING MANHOURS: N/A

ASSESSED BY/POC: AGUILAR, J. / MELVIN, M. CODE: 221.4
PHONE (DSN) 961-4001 (COMM) (757) 396-4001

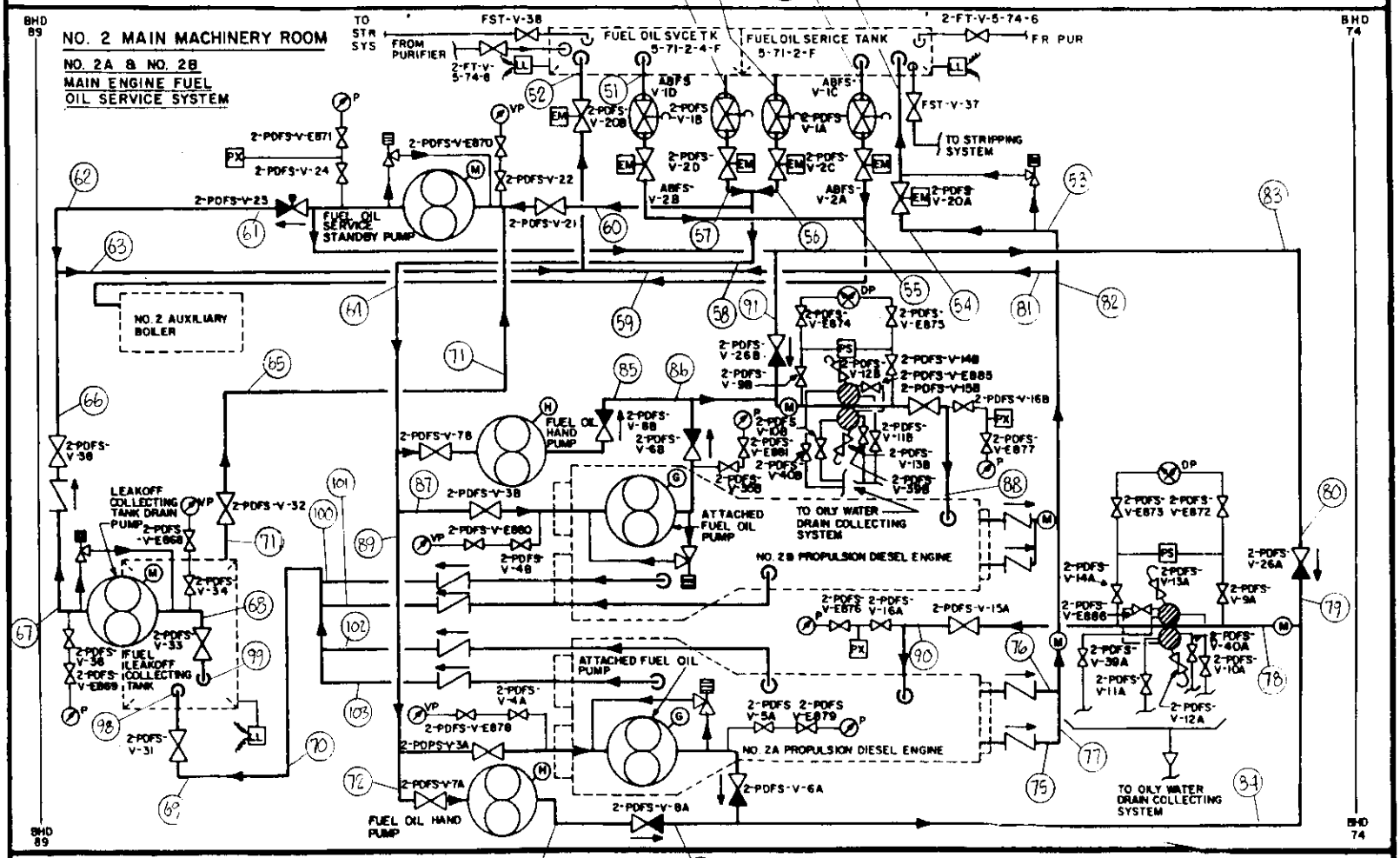
DIAGRAM FOR MAIN DIESEL PIPING



CODE: DMDP/0084/092796

USS WHIDBEY ISLAND (LSD-41)
U/T PIPING MEASUREMENT POINT DIAGRAM
SUPSHIP C&R USN PORTS VA VISIT DATES 17-20 June 1999

DIAGRAM FOR MAIN DIESEL PIPING



CODE: DMDP/0084/092796

PAGE 2 OF 3

USS WHIDBEY ISLAND (LSD 41)

FUEL SERVICE SYSTEM

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
1	2.5	0.200	0.200	0.195	0.200	B
2	2.5	0.215	0.220	NOTE 1	0.220	C
3	2.5	0.210	0.215	NOTE 1	0.210	C
4	2.5	0.200	NOTE 1	0.210	0.200	C
5	2.5	NOTE 1	0.080	NOTE 1	NOTE 1	A
6	2.5	NOTE 2	0.200	NOTE 2	NOTE 2	B
7	2.5	0.210	0.220	NOTE3	0.210	A
8	2.5	0.200	0.205	NOTE3	0.215	A
9		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
10	2.5	0.215	0.220	0.205	0.170	A
11	2.5	0.210	NOTE 1	0.210	0.195	B
12	2.5	0.220	0.190	NOTE 2	0.200	B
13	2.5	0.205	0.205	NOTE3	0.200	A
14		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
15	2	0.145	0.150	0.150	0.140	C
16	2	0.150	0.150	0.145	0.150	C
17	2	0.140	0.150	0.145	0.145	A
18		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
19		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
20		NOTE 2	NOTE 2	NOTE 2	NOTE 2	

UT #	SIZE	12	3	6	9	VIEW
21	1.5	0.145	0.150	0.150	0.150	B
22	1.5	0.150	0.150	0.145	0.140	B
23	1.5	0.150	0.145	0.145	0.150	A
24	2	0.145	0.150	0.150	0.150	C
25	2.5	0.195	0.190	0.200	0.195	A
26		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
27		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
28	2.5	0.150	0.155	0.155	0.150	B
29	2.5	0.220	NOTE 1	NOTE 1	0.215	C
30		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
31	1.5	0.150	NOTE 1	NOTE 1	NOTE 1	A
32		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
33	2	0.160	0.145	0.155	0.140	B
34	2.5	0.200	0.225	0.205	0.220	B
35		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
36	1.5	0.150	0.140	0.130	0.160	A
37	1.5	0.150	0.150	0.150	0.145	A
38	1.5	0.145	0.155	0.145	0.145	C
39	1.5	0.150	0.150	0.160	0.155	B
40		NOTE 2	NOTE 2	NOTE 2	NOTE 2	

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD 41)

FUEL SERVICE SYSTEM

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
41		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
42		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
43	1.5	0.145	0.145	0.150	0.145	C
44	1.5	0.155	0.160	0.155	NOTE 1	A
45		NOTE 3	NOTE 3	NOTE 3	NOTE 3	
46	1.5	0.150	0.145	0.155	0.155	B
47	2.5	NOTE 2	0.220	0.205	NOTE 2	A
48	2.5 Red Elb	0.240	NOTE 1	NOTE 1	0.235	B
49	2.5	NOTE 1	0.215	0.220	0.215	A
50	2.5 Red Elb	0.225	0.225	0.225	NOTE 1	A
51	2.5	0.195	0.200	0.200	0.210	B
52	2.5	NOTE 2	0.205	0.200	0.205	A
53	2.5	NOTE 1	0.205	0.185	0.200	C
54	2.5	0.215	0.200	0.220	NOTE 2	C
55	2.5	0.110	NOTE 2	NOTE 2	0.115	C
56	2.5	0.220	0.210	0.210	0.210	A
57	2.5	0.220	0.215	0.205	0.210	A
58		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
59	1.5	0.150	0.160	0.160	0.160	B
60	2	0.130	0.140	NOTE 2	NOTE 2	A

UT #	SIZE	12	3	6	9	VIEW
61	1.5	0.145	0.160	0.165	0.155	B
62		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
63		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
64	2	0.150	0.150	0.145	0.145	B
65		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
66	1.5	NOTE 1	NOTE 1	NOTE 1	NOTE 1	
67	1.5	0.150	0.150	0.150	0.155	B
68	2.5	0.205	0.205	0.210	NOTE 1	C
69		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
70		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
71		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
72	1.5	0.155	0.155	0.160	0.160	B
73	1.5	0.160	0.165	0.145	0.160	C
74	1.5	0.150	0.150	0.140	0.140	B
75		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
76		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
77		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
78		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
79	1.5	0.150	0.155	0.140	0.140	C
80	1.5	0.160	0.150	NOTE 2	0.150	C

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD 41)

FUEL SERVICE SYSTEM

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
81	1.5	0.140	0.140	0.150	0.145	C
82	2.5	0.240	0.225	0.235	NOTE 1	B
83	1.5	0.145	0.150	0.130	0.150	B
84	1.5	0.140	NOTE 2	NOTE 2	0.150	C
85	1.5	0.150	0.150	0.145	0.145	A
86		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
87		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
88	1.5	0.155	0.165	0.160	0.150	C
89		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
90	1.5	0.150	0.160	0.165	0.160	C
91		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
92		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
93	2.5	0.190	NOTE 3	NOTE 3	NOTE 3	C
94		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
95		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
96		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
97		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
98		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
99	2.5	0.205	0.210	NOTE 2	NOTE 2	A
100		NOTE 2	NOTE 2	NOTE 2	NOTE 2	

UT #	SIZE	12	3	6	9	VIEW
101		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
102		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
103		NOTE 2	NOTE 2	NOTE 2	NOTE 2	

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD-41)

SYSTEM	SWLIN	EIC	APL	RIN
LUBE OIL	54415	N/A	N/A	

WORK CENTER	JSN	EQUIPMENT FUNCTIONAL DESCRIPTION	IDENT/SERIAL	LOCATION
				MCHRY SPACES

DATE ASSESSMENT COMPLETED: 20 JUNE 1999

PROCEDURES USED: SUPSHIP PORTS U/T FOR PIPING SYS

WHAT PORTIONS OF THE EQUIPMENT OR PROCEDURES COULD NOT BE ASSESSED?:
OUTSIDE MCHRY SPACES

SIGNIFICANT FINDINGS:
SNAPSHOTS U/T PIPING INSPECTION OF THE L/O PIPING REVEALED NO DISCREPANCIES.

CORRECTIVE ACTION TAKEN/RECOMMENDED:
N/A

OVERALL CONDITION OF EQUIPMENT (CIRCLE ONE):

(OPERATIONAL) NON-OPERATIONAL REDUCED CAPABILITY

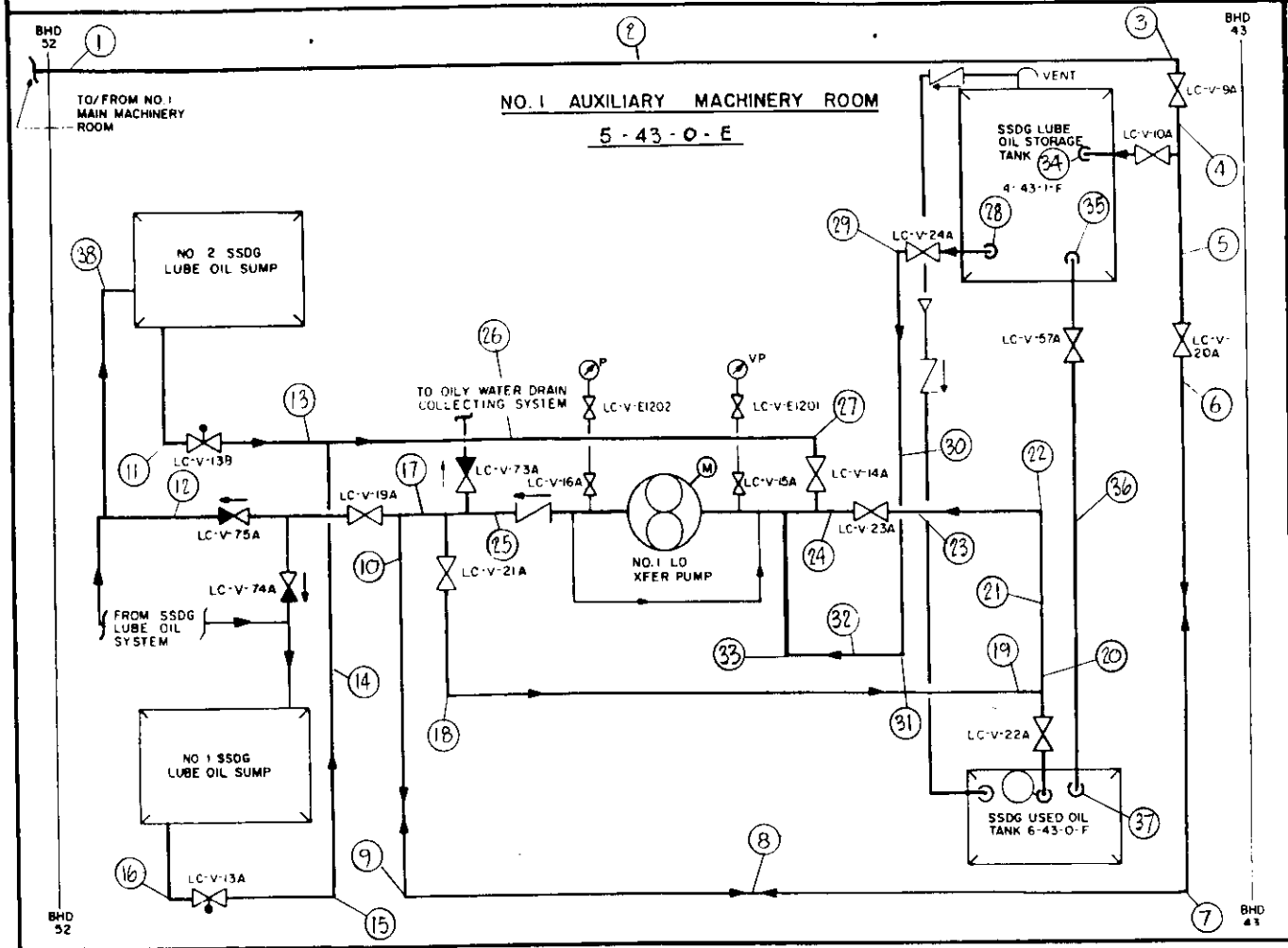
OTHER (EXPLAIN): N/A

NUMBER OF PERSONNEL TRAINED: N/A TRAINING MANHOURS: N/A

ASSESSED BY/POC: PALAZZO, G / PRENDERGAST, B. CODE: 221
PHONE (DSN) 961-4001 (COMM) (757) 396-4001

DIAGRAM FOR LUBE OIL PURIFYING AND TRANSFER SYSTEM

SD. NO. DLP



LEGEND

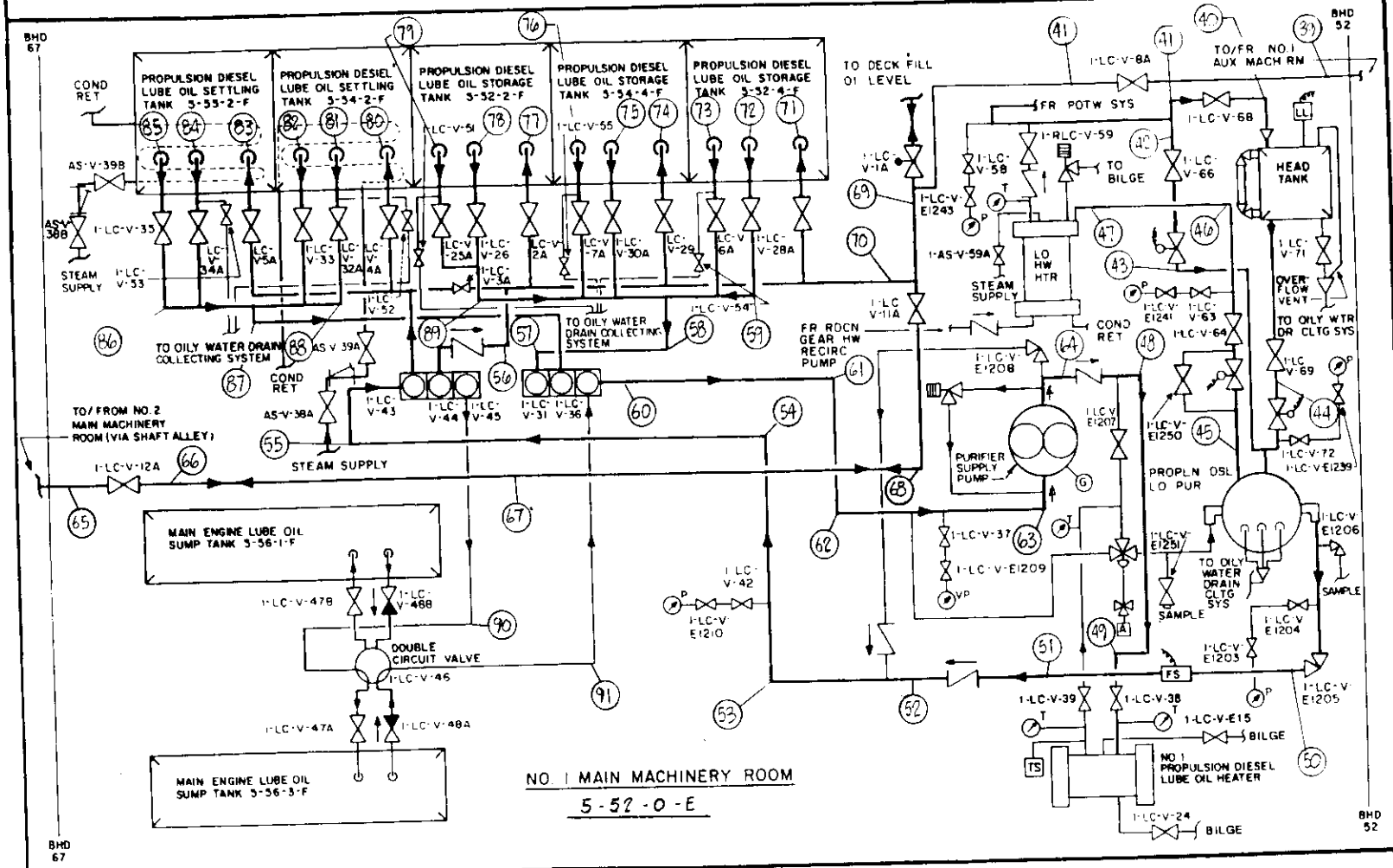
- STOP VALVE
- STOP CHECK VALVE
- SWING CHECK VALVE
- 3-WAY VALVE DIAPHRAM OPERATED
- RELIEF VALVE
- ANGLE VALVE
- DOUBLE CIRCUIT VALVE
- MANIFOLD VALVE
- FS — FLOW SENSOR
- M — MOTOR-DRIVEN
- G — GEAR-DRIVEN
- T — TEMPERATURE GAUGE
- P — PRESSURE GAUGE
- VP — VACUUM PRESSURE GAUGE
- PUMP, GEAR
- SSDG — SHIP SERVICE DIESEL GENERATOR
- Y STRAINER

CODE: DLP/0392/020698

USS WHIDBEY ISLAND (LSD-41)
U/T PIPING MEASUREMENT POINT DIAGRAM
SUPSHIP C&R USN PORTS VA VISIT DATES 17-20 June 1999

DIAGRAM FOR LUBE OIL PURIFYING AND TRANSFER SYSTEM

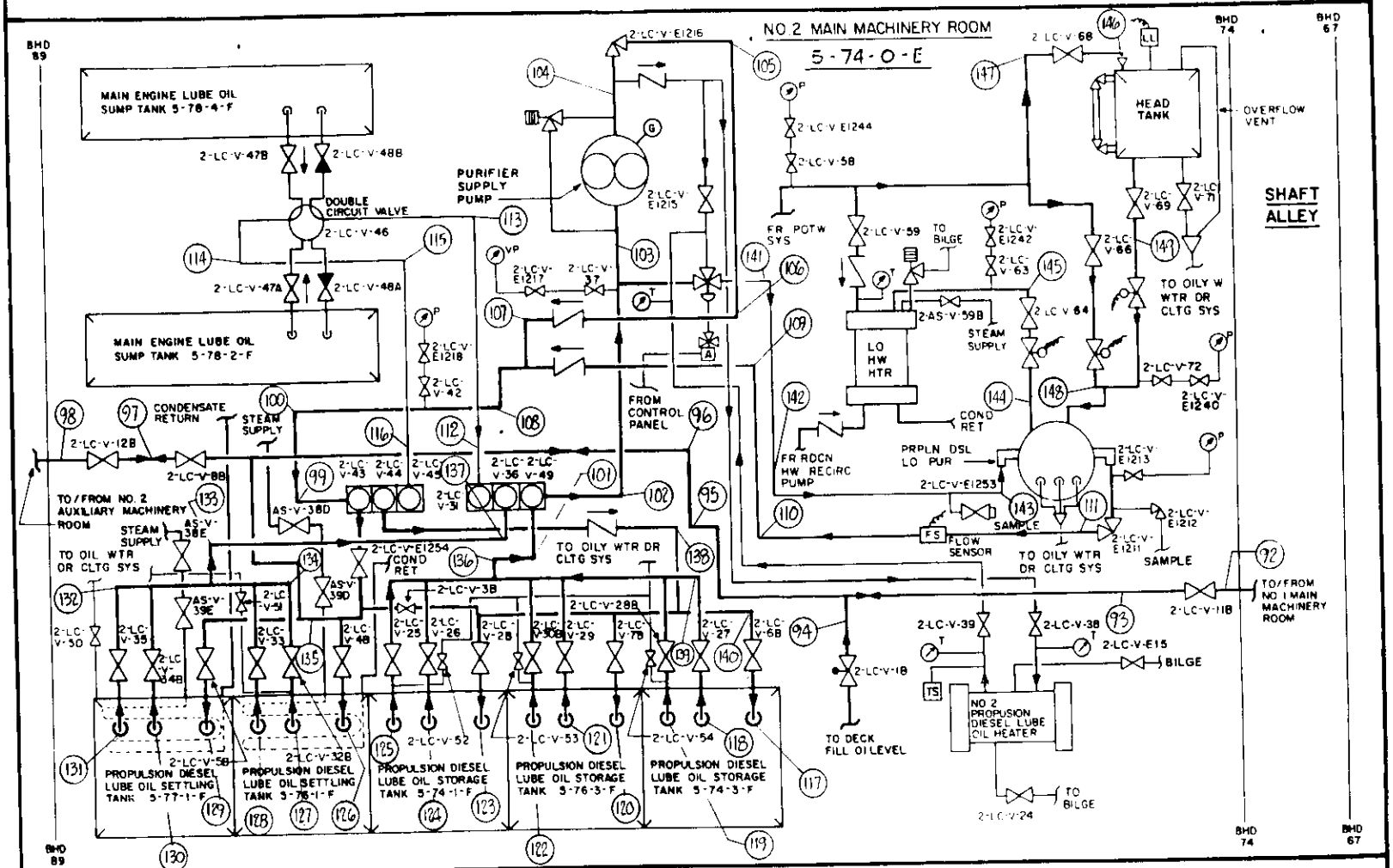
SD. NO. DLP



CODE: DLP/0392/020698

DIAGRAM FOR LUBE OIL PURIFYING AND TRANSFER SYSTEM

SD. NO. DLP



CODE: DLP/0392/020698

DIAGRAM FOR LUBE OIL PURIFYING AND TRANSFER SYSTEM

SD. NO. DLP

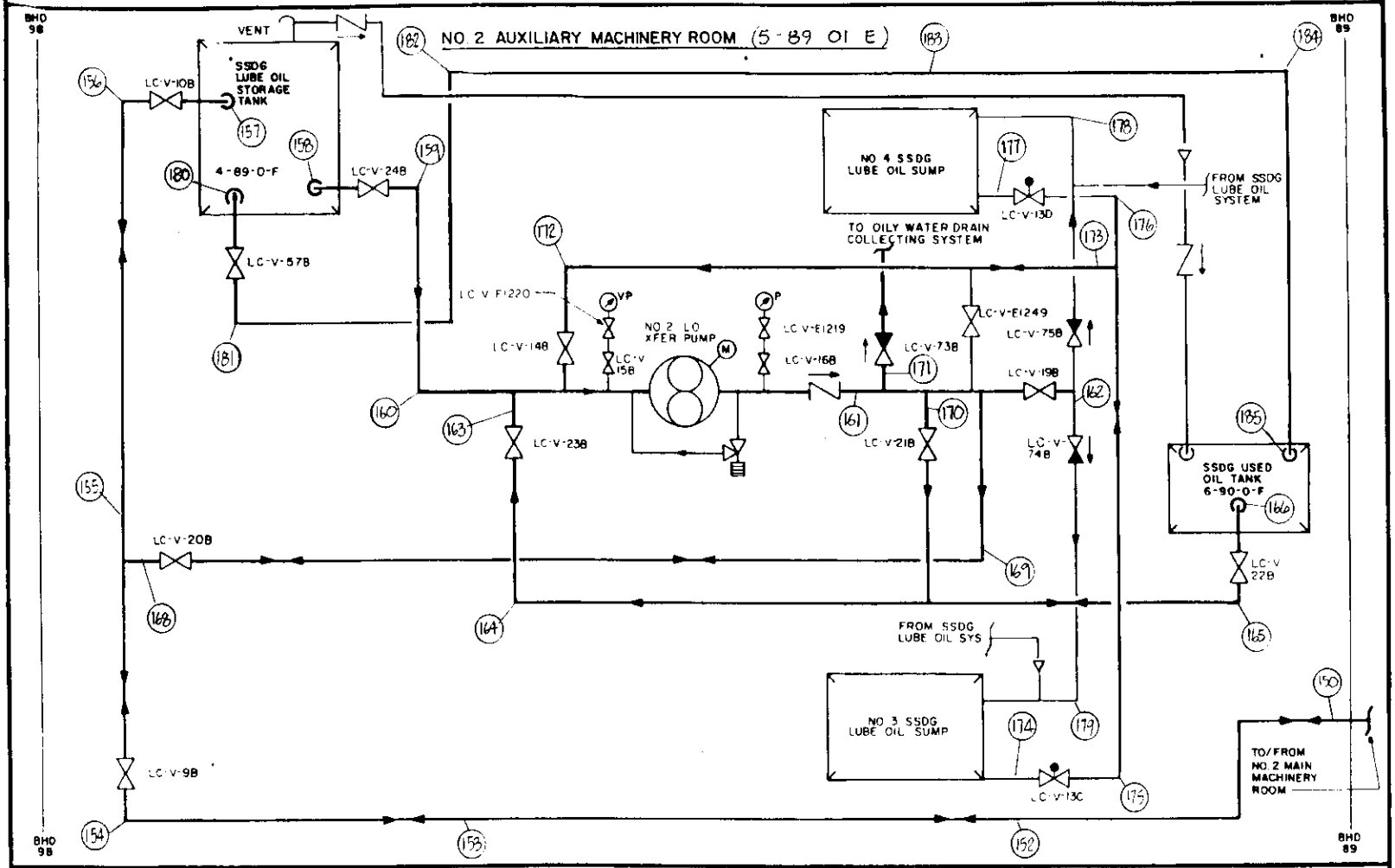
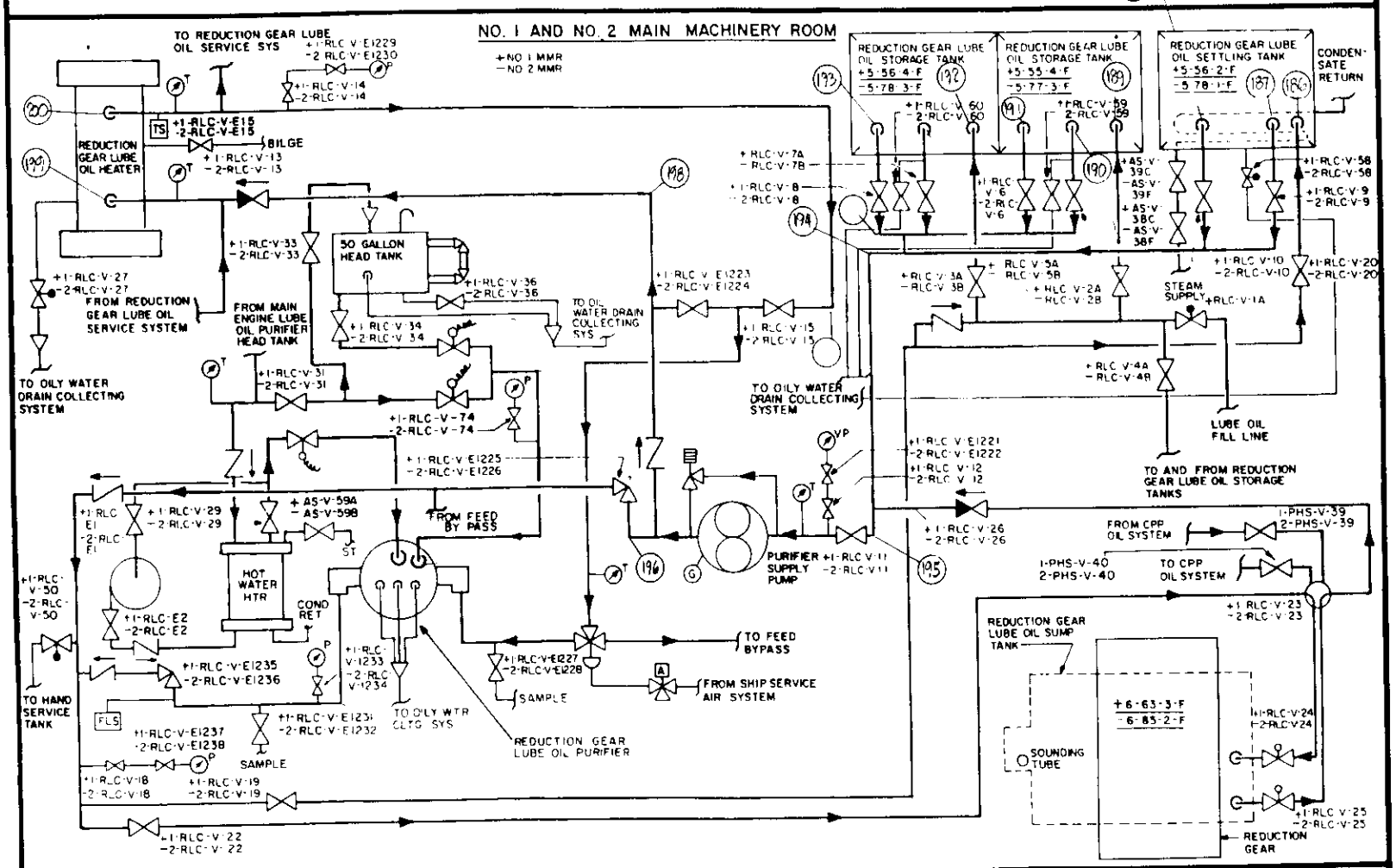


DIAGRAM FOR LUBE OIL PURIFYING AND TRANSFER SYSTEM

SD. NO. DLP



CODE: DLP/0392/020698

USS WHIDBEY ISLAND (LSD 41)

LUBRICATING OIL SYSTEM

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
1		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
2	4	0.230	0.230	0.225	0.230	A
3	4	NOTE 2	0.235	0.240	0.230	A
4	4	0.275	0.245	0.245	0.270	B
5	4	0.220	0.235	0.235	0.220	C
6	4	0.210	0.220	0.215	0.225	C
7	4	0.215	0.215	0.230	0.225	B
8		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
9		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
10	4	0.230	0.230	0.225	0.220	A
11	4	0.250	0.255	0.270	NOTE 2	B
12	1.5	0.140	0.150	0.150	0.145	B
13	4	0.240	0.245	0.210	0.240	B
14	NUMBER NOT USED					
15	4	0.245	0.235	0.240	0.225	B
16		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
17	4	0.225	0.225	0.215	0.220	B
18	4	0.215	0.220	0.235	0.230	A
19	4	0.260	0.235	0.245	0.240	B
20	NUMBER NOT USED					

UT #	SIZE	12	3	6	9	VIEW
21	NUMBER NOT USED					
22	NUMBER NOT USED					
23	4	0.240	0.245	0.255	0.230	A
24	4	0.255	0.245	0.230	0.260	A
25	4	0.235	0.225	0.255	0.245	A
26	NUMBER NOT USED					
27	4	0.260	0.245	0.235	0.255	B
28	4	0.225	0.230	0.225	0.220	A
29	4	0.255	0.285	0.255	0.280	C
30	4	0.255	0.285	0.250	0.270	B
31	4	0.250	0.240	0.270	0.245	C
32	4	0.265	0.235	0.225	0.260	C
33	4	0.240	0.250	0.235	0.220	C
34	4	0.240	0.245	0.240	0.240	C
35	1	0.105	0.110	0.110	0.105	C
36	1	0.110	0.115	0.105	0.110	C
37		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
38		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
39	4	0.235	0.270	0.235	0.230	B
40	HEAD TANK OFF WATER LINE					

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD 41)

LUBRICATING OIL SYSTEM

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
41	4	0.250	0.250	0.230	0.260	A
42	HEAD TANK OFF WATER LINE					
43	HEAD TANK OFF WATER LINE					
44	HEAD TANK OFF WATER LINE					
45	HEAD TANK OFF WATER LINE					
46	WATER LINE					
47	WATER LINE					
48	2	0.145	0.155	0.150	0.145	B
49	2	0.210	0.220	0.215	0.220	A
50	1	0.135	0.145	0.135	0.150	A
51	1	0.145	0.145	0.130	0.145	A
52	1	0.130	0.150	0.155	0.125	B
53	1	0.150	0.145	0.120	0.140	B
54	4	0.250	0.225	0.235	0.240	B
55	4	0.230	0.245	0.250	0.255	A
56		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
57		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
58	4	0.225	0.245	0.240	0.235	A
59	3	0.220	0.215	0.230	0.215	C
60	4	0.230	0.245	0.250	0.240	B

UT #	SIZE	12	3	6	9	VIEW
61	4	0.205	0.250	NOTE 1	0.210	A
62		NOTE 3	NOTE 3	NOTE 3	NOTE 3	
63		NOTE 3	NOTE 3	NOTE 3	NOTE 3	
64		NOTE 3	NOTE 3	NOTE 3	NOTE 3	
65		NOTE 2	NOTE 2	NOTE 2	NOTE 2	
66	4	0.235	0.275	0.240	0.250	C
67	4	0.240	0.260	0.245	0.265	C
68	4	0.225	0.240	0.260	0.245	C
69	4	0.230	0.240	0.250	0.245	C
70	4	0.270	0.265	0.250	0.255	B
71	3	0.250	0.220	0.240	0.220	C
72	3	0.260	0.220	0.230	0.240	C
73	3	0.225	0.225	0.240	0.240	C
74	3	0.265	0.270	0.265	0.260	C
75	3	0.240	0.205	0.240	0.225	B
76	3	0.270	0.270	0.230	0.290	B
77	3	0.235	0.230	0.245	0.240	C
78	3	0.235	0.250	0.265	0.275	C
79	3	0.235	0.210	0.225	0.220	B
80	3	0.210	0.195	0.230	0.225	B

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

USS WHIDBEY ISLAND (LSD 41)

LUBRICATING OIL SYSTEM

VISIT DATES 17 TO 20 JUNE 1999

UT #	SIZE	12	3	6	9	VIEW
81	3	NOTE 1	0.205	NOTE 1	NOTE 1	C
82	3	0.215	0.210	0.215	0.220	C
83	3	0.225	0.205	0.225	0.245	C
84	3	NOTE 1	NOTE 1	NOTE 1	NOTE 1	C
85	3	NOTE 1	NOTE 1	NOTE 1	NOTE 1	C
86	3	0.200	0.240	0.210	0.210	A
87	3	NOTE 2	NOTE 2	NOTE 2	NOTE 2	
88	3	0.230	0.230	0.225	NOTE 1	B
89	3	NOTE 2	NOTE 2	NOTE 2	NOTE 2	B
90	2	0.115	0.155	NOTE 1	0.160	A
91	2.5	0.225	0.200	0.215	0.220	A
92	4	0.220	0.225	0.235	0.235	C
93	4	0.245	0.235	0.235	0.245	A
94	3	0.205	0.225	0.215	0.225	B
95	4	0.220	0.220	0.235	0.220	B
96	4	NOTE 1	0.280	0.270	0.270	A
97	4	0.230	0.230	0.255	0.240	A
98	4	0.245	0.240	0.245	0.240	A
99	3	0.270	0.260	0.245	0.275	B
100	1	0.145	0.140	0.135	0.135	A

UT #	SIZE	12	3	6	9	VIEW
101	NUMBER NOT USED					
102	3	0.205	0.240	0.245	0.240	B
103		NOTE 3	NOTE 3	NOTE 3	NOTE 3	
104		NOTE 3	NOTE 3	NOTE 3	NOTE 3	
105	2	0.140	0.155	0.145	0.145	B
106	2	0.145	0.150	0.150	0.155	B
107	1	NOTE 2	NOTE 2	NOTE 2	NOTE 2	A
108	1	0.145	0.145	0.145	0.145	C
109	1	0.150	0.145	0.155	0.150	B
110	1	0.145	0.155	0.135	0.140	A
111	0.75	NOTE 3	NOTE 3	NOTE 3	NOTE 3	B
112	2	0.155	0.150	0.150	0.150	C
113	2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	A
114	2	0.135	0.160	0.145	0.150	B
115	2.5	0.215	0.200	0.215	0.220	C
116	2	0.145	0.165	0.155	0.150	C
117	4	0.260	0.220	0.285	0.230	C
118	3	0.220	0.210	0.220	0.215	B
119	3	0.230	0.220	0.230	0.220	B
120	4	0.265	0.255	0.280	0.275	C

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

LUBRICATING OIL SYSTEM

UT #	SIZE	12	3	6	9	VIEW
121	3	0.225	0.215	0.210	0.215	B
122	3	0.220	0.230	0.210	0.210	B
123	4	0.270	0.230	0.235	0.240	B
124	3	0.230	0.225	0.235	0.230	C
125	3	NOTE 1	0.235	0.240	0.220	B
126	3	0.240	0.225	0.240	0.235	C
127	3	0.210	0.210	NOTE 2	0.195	C
128	3	0.220	0.220	NOTE 1	0.220	A
129	3	0.205	0.205	0.195	0.205	B
130	3	NOTE 1	NOTE 1	0.210	0.230	B
131	3	0.205	0.210	0.200	NOTE 1	B
132	3	NOTE 2	NOTE 2	0.215	0.200	C
133	3	0.225	0.245	0.240	0.235	A
134	3	0.240	0.240	0.255	0.250	C
135	3	0.235	0.230	0.255	0.235	C
136	3	0.210	0.200	0.215	0.220	C
137	3	0.235	0.240	0.235	0.215	C
138	4	0.230	0.235	0.235	0.230	C
139	NUMBER NOT USED					
140	NUMBER NOT USED					

UT #	SIZE	12	3	6	9	VIEW
141	NUMBER NOT USED					
142	NUMBER NOT USED					
143	0.75	NOTE 3	NOTE 3	NOTE 3	NOTE 3	B
144	1	NOTE 2	NOTE 2	NOTE 2	NOTE 2	A
145	NUMBER NOT USED					
146	0.5	NOTE 3	NOTE 3	NOTE 3	NOTE 3	C
147	0.5	NOTE 3	NOTE 3	NOTE 3	NOTE 3	A
148	1	NOTE 3	NOTE 3	NOTE 3	NOTE 3	B
149	0.75	NOTE 3	NOTE 3	NOTE 3	NOTE 3	A
150	4	0.235	0.235	0.250	0.240	A
151	NUMBER NOT USED					
152	4	0.255	0.215	0.245	0.230	B
153	NUMBER NOT USED					
154	NUMBER NOT USED					
155	4	0.235	0.220	0.260	0.255	A
156	NUMBER NOT USED					
157	4	0.205	0.215	0.230	0.220	A
158	4	NOTE 1	NOTE 1	NOTE 1	NOTE 1	A
159	4	NOTE 1	NOTE 1	NOTE 1	NOTE 1	C
160	4	0.255	0.255	0.255	0.250	A

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.

LUBRICATING OIL SYSTEM

UT #	SIZE	12	3	6	9	VIEW
161	4	NOTE 2	NOTE 2	0.255	0.250	C
162	1.5	0.140	0.160	0.145	0.150	C
163	4	0.230	0.235	0.225	0.235	A
164	4	0.230	0.215	0.220	0.225	B
165	NUMBER NOT USED					
166	3	NOTE 3	NOTE 3	NOTE 3	NOTE 3	C
167	NUMBER NOT USED					
168	4	0.235	0.240	0.225	0.250	B
169	4	0.260	0.220	0.220	NOTE 2	C
170	4	0.210	0.210	0.210	0.210	C
171	2	0.165	0.165	0.155	0.170	C
172	4	0.235	0.220	0.225	0.225	A
173	4	0.220	0.225	0.250	0.215	B
174	4	0.230	0.220	0.225	0.235	C
175	4	0.220	0.225	0.220	0.230	C
176	NUMBER NOT USED					
177	3	NOTE 3	NOTE 3	NOTE 3	NOTE 3	C
178	2	NOTE 1	NOTE 1	NOTE 1	NOTE 1	C
179	NUMBER NOT USED					
180	NUMBER NOT USED					

UT #	SIZE	12	3	6	9	VIEW
181	NUMBER NOT USED					
182	NUMBER NOT USED					
183	NUMBER NOT USED					
184	NUMBER NOT USED					
185	2	NOTE 1	NOTE 1	NOTE 1	NOTE 1	B
186	4	NOTE 2	0.205	0.215	0.225	B
187	3	NOTE 2	0.230	0.225	0.230	B
188	3	0.230	0.225	0.210	0.225	C
189	3	0.225	0.240	0.245	0.250	B
190	4	0.225	0.250	0.215	0.230	B
191	3	0.210	0.200	0.200	0.195	B
192	3	0.205	0.200	0.210	0.200	B
193	3	0.205	0.195	0.205	0.210	B
194	NUMBER NOT USED					
195	2.5	NOTE 2	NOTE 2	NOTE 2	NOTE 2	B
196	2.5	NOTE 2	NOTE 2	NOTE 2	NOTE 2	B
197	NUMBER NOT USED					
198	NUMBER NOT USED					
199	2	0.225	0.215	0.215	0.225	B
200	2	0.225	0.215	0.225	0.215	B

NOTE 1: DUE TO SURFACE IRREGULARITIES UNABLE TO OBTAIN ACCURATE U/T READINGS.
NOTE 2: DUE TO LOCATION OF THE PIPE UNABLE TO OBTAIN U/T READINGS.
NOTE 3: DUE TO CLOSE PROXIMITY OF PIPE FITTINGS UNABLE TO OBTAIN U/T READINGS.
NOTE 4: VIEW A = PIPING RUNNING FORE AND AFT TOP OF PPG IS 12 O'CLOCK; VIEW B = PIPING RUNNING UP AND DOWN 12 O'CLOCK IS FORWARD;VIEW C = PIPING RUNNING PORT AND STBD 12 O'CLOCK IS TOP, 3 O'CLOCK IS FORWARD.